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AMAZING STORIES

Science Fiction

Vol. 10

JULY, 1935

No. 4

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No. 4

T. O'CONOR SLOANE, Ph.D., *Editor*

Editorial and General Offices: 461 Eighth Avenue, New York, N. Y.

Extravagant Fiction To-day Cold Fact To-morrow

The Future of Power on Our Earth

By T. O'CONOR SLOANE, Ph.D.

MAN has so little to do with the inconceivably large universe in which we live, that it is presumptuous in a certain degree for him to speak of wasted heat. But, as far as our little spheroid is concerned and taking into consideration that mankind is a most sensitive thermometer, he is justified in speaking of thermal waste, which is waste of power. For man's very life depends on the presence of heat in the proper amount. If the temperature of the air changes only a little, man suffers and with a few more degrees of change, either increase or decrease, he dies. The balance is so close and is maintained by such delicate factors, that its exactitude is astonishing. If instead of saying that it is a cold day or that it is dreadfully hot, we might better stop and think that the extremes, which we must endure, are covered by and lie within a very minute range of temperature.

The maintaining of a definite range of

temperature on this earth of 'ours', as we very inaccurately call it, depends on elements that must be preserved intact. The least variation would throw the earth into utter confusion as far as animal life is concerned, and would "modify" mankind out of existence, as we may express it, perhaps rather crudely.

Heat has been defined as a mode of motion. Everything that exists on this earth is in a state of molecular vibration. Absolutely nothing is quiet. As a substance is caused to rise in temperature, to get hotter, its vibrations are more intense, and their paths of vibration tend to increase in length, the substance increases in size if it is not confined, and if it is so restrained it produces an increased pressure against any retaining vessel.

All this is very elementary and is familiar to all. But it leads to some impressive conclusions. The vibrations of a substance, as its temperature is reduced, diminish in energy. As they go

through a definite fall of temperature, a point is reached called the absolute zero—when they are so cold that their vibrations cease. This temperature has been approached in laboratory investigations, but has never been reached experimentally. It seems to be almost a contradiction in terms to speak of going below it, and as far as we know there is no impenetrable wall at 273.1° centigrade, which marks the absolute zero. We reduce temperature by diminishing the motions of the molecules of a substance. But if we were to reach the absolute zero there would be no motions to be diminished, either in paths or intensity, so the physicist would have nothing to work on. He would seem to have reached what may be called an impasse—"thus far shalt thou go and no further."

But the absolute zero has not yet been attained, although it has been very closely approached. It certainly presents a paradox to our minds. We cannot conceive of a limit to space, even with Einstein and curved space to draw upon, and in the absolute zero we encounter an analogous case—a limit to temperature we may call it—but we cannot conceive of it. It seems as if there should be no limit to the fall of temperature.

From our standpoint, the waste of heat in the case of the earth is appalling. The earth intercepts a minute fraction of the heat radiated by the sun. This would be bad enough. The figure is reached by dividing the equatorial cross-section of the earth by the surface area of a sphere of about 93,000,000 miles radius. In round numbers the cross-section of the earth at the equator or through the poles is fifty millions of square miles. This is about one divided by two and one-half billionths, of the area receiving the heat of the sun at the distance of the earth therefrom. Here is our first great waste of heat. Of this $\frac{1}{2,000,000,000}$

a considerable part is lost by reflection from the surface. The spherical shape of the earth is one principal cause of this loss. Otherwise the polar regions would be as warm as the tropical zone.

All our sources of heat are due directly or indirectly to the heat of the sun, the minute quantity received and utilized by the earth supplying us with fuel and water power. Coal is fossilized vegetation produced in geologic times under the action of the heat of the sun. For the great tree and fern growths of the Carboniferous ages, a moist, hot atmosphere was needed and the sun was the producer of it. It is fair to say that human existence would have been intolerable, even if it were possible, in the conditions then prevailing. Every flowing stream or river, every waterfall, is due to the heat of the sun. If the earth were flat instead of round we might expect a great increase in water powers. As it is now we are drawing upon the Carboniferous era for most of our power. It has been figured that all the water power of the United States, if utilized completely, would supply but a fraction of the power required for the needs of mankind, and we are living to-day on the vegetation of the Carboniferous time and on the petroleum and natural gas of geologic ages. It is probable that the profuse growth of vegetation of the Carboniferous epoch was partly due to a large, relative percentage of carbon dioxide in the air, perhaps twice as much as at the present era.

Our earth receiving a minute quantity of the heat of the sun, and reflecting perhaps half of it, out into space, we can look into the future and realize that our successors on this planet may be hard put to it for fuel, because mines will eventually become exhausted. Various attempts, all on a very small scale, have been made to utilize the heat radiated

from the sun, and with some degree of success. But compare the getting enough heat to do a little cooking compared with the amount required to smelt a thousand tons of iron ore in a blast furnace in a day. How many realize the perfect inferno of burning oil that is driving the machinery in a ship that is doing the transatlantic passage in less than five days. It has been calculated that if all the water-power in the United States were put to work it would produce only a small proportion of the energy needed for the factories and metallurgical works. We are using up coal and petroleum, and it seems inevitable that sooner or later the supplies of both will be exhausted. Before that time the internal combustion engine will have been improved and all sorts of processes and applications of fuel will have been invented, but they will be useless if coal and oil are gone. An incidental trouble is that along with the development of this class of invention will come the exhaustion of the fuel supply. About seventy years ago the incidental production of naphtha in petroleum refineries became a nuisance, and the product was sometimes treated as waste. It now costs ten cents or more a gallon as the automobiling world knows. But people of the next century will have to look out for themselves—we cannot do it for them. Coincidentally with the future exhaustion of fuel the exhaustion of iron is going on. We are using annually more and more of the metal as years go by, so what is man to do when the mines are exhausted?

When this will come to pass it is impossible to say. The State Geologist of Pennsylvania, John Peter Lesley, some forty or more years ago predicted that the great production of petroleum could not last forever.

And now with the discovery of new fields absolutely no signs of exhaustion

are to be surmised except on general principles.

There is another inexhaustible source of power. Man can draw upon it *ad libitum* without bringing about the least fraction of exhaustion and this may be called lunar power, the power of the moon. It is supplemented by the mass of the sun without reference to its heat, and for us this supply will endure for ages, irrespective of what drafts are made upon it. It is one of those powers never resting, inexhaustible, that cannot be successfully used except in its greater manifestations and these are not frequent. The reference is to the tides. The moon circling the earth carries a wave of water with it. The course and rise and fall of the wave is very irregular, due to the interference of the land. The sun assists a little in the work. Where there is a large body of water, free from the effects of land upon the tide-wave, the rise is comparatively slight. But in some harbors the water is driven in to such an extent that it rises many feet. The rise and fall of the Mediterranean Sea and on the Pacific Ocean are often only two feet, but, where the contour and location of the shores favor it, the rise and fall may be fifty feet. The great heights obtained in the water of the Bay of Fundy, which lies near the Canadian-American frontier could give power in great quantity, from the twenty-odd feet of rise and fall. Such places where this inexhaustible power exists in an available condition are not many. Liverpool and Bristol in England are representative places where there are very great tides, as yet unused. The Bay of Fundy proper, may yet be put to work, and there is a strong movement in the direction of not letting the great area affected by the rise of the greatest tide in the world go to waste. Day after day thousands of horse power are exerted there by the moon and sun and

no use is made of it. This may be fairly called lunar power, as the moon is responsible for most of it. The system for using the tides in the harbor of Bristol has been studied out, and plans have been made to use them. But the tidal power cannot be used to great effect, except where there is considerable rise and fall and these places are few and their location with reference to industry is an important element in the prospects of their utilization.

Tidal ocean power is picturesquely called blue coal; the power of water falls so extensively used in Switzerland is called white coal as derived from mountain snow and ice; the milder power of rivers is called green coal.

But the trouble is that the sum of all the water powers available to man is but a small fraction of his needs. He may acquire the ability to utilize natural powers in higher degree than he has ever imagined.

About the time of Shakespeare and Ben Jonson a poet and historian William Drummond called Drummond of Hawthornden (A.D. 1583-1649), brought out the insignificant size of our earth. In one of his works Drummond writes as follows:

"This globe of the earth, which seemeth large to us, in respect of the universe and compared with that wide pavilion of heaven, is less than little, of no sensible quantity, and but as a point."

When we think of the sun's distance from the earth of about 500 light sec-

onds compared with the smallest stellar distance of about $4\frac{1}{4}$ light-years, we realize how insignificant our terrestrial orbit is. Calculate the seconds in four and a half years, and see how insignificant an affair 500 light seconds is.

We will reach the conclusion that Drummond of Hawthornden was right in his view of the insignificance of our little globe.

The interior of the earth is supposed to be very hot. In a shaft reaching down into its surface the temperature is found to rise as the depth increases. We may conclude from this that some of the heat we live by may come from the center mass of our globe. But the coating of rock, water and soil acts as a blanket to keep the heat from reaching the surface. If the interior of the earth is a mass of iron at red or white heat, it would heat the ocean and melt the polar ice in short order. But this it does not do, so it is evidently kept in restraint. But what a strange conception it would be, if we had to realize that we were living on a mass of iron whose temperature perhaps exceeds that of liquid steel, of the modern open-hearth furnace, or of the Bessemer converter. There is every possibility that this is the truth.

Few realize the difficulty of sinking a shaft to the level of economic heat, of heat which may be used for practical purposes. It has been proposed to sink a very deep shaft to explore the interior crust, and it was found to be a very difficult and expensive operation.

The End

Space War

By NEIL R. JONES

Few characters on our pages have won more lasting favor than Professor Jameson. We are telling the reader nothing in advance when we say that the description of the strange wars in this story present a novel aspect of the adventures of our hero.

Introduction

DUST to dust. So runs the ancient adage. He who lives today and dies tomorrow has lived in many structures and forms—and will continue to do so eternally. The grass grows more luxuriant over the grave. Molecular structure is impervious to universal change, subjected as it is to varying planetary conditions. Like the law of the deep sea, where one lives to eat and be eaten, so is the law above water, yet the transition is more intricate and complex. Animal life waxes strong upon the elemental sustenance of the earth, knows its brief day, then returns from whence it came to form the fertility necessary for the perpetuation of future generations.

After all his superior magnificence and earth dominance is taken into consideration, the fate of man stands out disappointingly common. Though decelerated to the maximum length of time by the artifices of mortality, his decomposition and change is as inevitable as that of the lowly insect or the troublesome, unlovely weed. In fact, various atomic units of his body may once have been part of an insect, or weed, and may be so again, all depending on the whims of an interminable fate. Atoms bear no respect for personalities. Atoms do not die but constantly change structural relations in never ceasing experiment. They are age-old, even beyond the hazy past

preceding the age of dinosaurs, and their future remains indefinitely undying.

Professor Jameson knew this. Did he abhor the prospects of his body disintegrating after his death, like the established, inescapable precedence of all humanity, or was it the illustrious distinction of knowing that his corpse would never disintegrate that made him seek the boundless space between worlds as his grave? Following his death in 1950, his body was enclosed in a rocket he had previously built, and he was shot into the vast, star-studded mausoleum of interstellar space. Professor Jameson's rocket satellite circled the earth for more than forty million years while mankind and all other forms of life gradually vanished from the face of a chill, dying planet. The atoms had now become more or less dormant, lacking the stimulating ambition of a blazing sun. Earth's parent orb now hung blood red in the sky, nearer to earth yet cooled.

His rocket might have circled the earth forever had there been no interruption. Forever, did I say? Forever is significant of time, and time does not exist except as a plane along which the consciousness of sentient and intelligent beings move. At least, the rocket satellite with its eternal corpse would have continued its aimless pilgrimage until the earth eventually fell back into the sun from which it had been hurled at world-birth. But the professor's re-

markable experiment was to bear unsuspected fruit. Forty million years beyond the twentieth century space wanderers passed the dying world in their space ship. They were not flesh and blood space travelers, though it was true that once they had been so.

They were Zoromes, machine men from distant Zor, a far off world of another planetary system. They removed the brain of Professor Jameson from his dead body and placed it in one of their machines, stimulating his brain into activity once more. Like them, he had become a brain in a metal head, a conical head surmounting a cubed, metal body, this body equipped with four metal legs and six metal tentacles. A complete circle of mechanical eyes peered from the head. Symbolic of the efficiency and practical genius of the Zoromes was a single eye which gazed upward from the apex of the conical head. The machine men of Zor conversed by means of mental telepathy.

The brain of the long dead professor was stimulated into life once more, and he regained consciousness, from his deathbed in 1950, to the strangest of imaginable situations forty million years later in the shadow of his own world whose changed continental features were no longer familiar to his sight. It was difficult for him to realize the truth, which he feared to be the distorted figment of delirium born from a physical rally of waning life force.

The last representative of mankind, the professor, now a machine man, joined the Zoromes upon a journey of perpetual discovery and exploration among the uncounted worlds of the myriad shining stars.

Eventually, the ship returned to Zor, and here Professor Jameson found both machine men, as well as flesh and blood Zoromes, on the eve of space war with the Mumes, veritable Frankenstein crea-

tions of a planetary system near by to Zor. The Zoromes had given the Mumes brain transpositions and mechanical bodies and in return had reaped the vicissitudes of ambition and treachery. The rising arrogance of the empire-mad Mumes, whose eyes were bent covetously upon Zor and its five sister worlds, brought about perfunctory raids on Zor for which the Zoromes had retaliated. Space war, like a monstrous orgre of the cosmos, loomed over both planetary systems.

CHAPTER I

PROFESSOR JAMESON gazed from the space flier at a brilliant, dazzling ball which outshone all other objects in the surrounding skies. It was Grutet, the little chromium-plated, sister-world adjacent to Zor. Farther away loomed Zor itself, while several scattered points of fixed light, standing out prominently against the background of twinkling stardust, marked the positions of the other four worlds of the planetary system. The professor turned and contemplated a fellow machine man, 12W-62, who had formerly been a flesh and blood Zorome known as Bext.

Bext and Princess Zora had been lovers. Bext was captured by the Mumes, and Zora had gone with two shiploads of Zoromes to effect his release from captivity. To her horror, she had seen Bext killed before her very eyes by the vindictive Mumes, yet upon her return to Zor she had found Bext a machine man. The ship of 24J-151, which reached Zor first, had rescued the head of Bext with its all important brain, and this had been placed in a machine and recalled to life again. But with the death of Bext went love's fleeting dream, and Zora discovered only a solicitous, yet passionless machine man in place of her lover. Torn

with the relentless anguish of a lost love, Zora, too, became a machine man or rather woman, 119M-5.

"You have not been a machine man for long," the professor radiated mentally to 12W-62, "and for the position you have voluntarily chosen, it appears that your career may be a short one."

"What of yourself?" queried Bext. "You, too, have chosen to be among those who leave on the first of the ships for the initial attack on Mumed."

"True enough, yet several of my most intimate companions have volunteered to man the space ships of the vanguard," the professor explained, "and there is no better reason for my choice."

"Do you leave as a group?" asked 12W-62, turning the small space flier back in the direction of Zor. "Your expedition under 744U-21, I mean."

"No, we are broken up. 744U-21 is leaving with the main fleet which shall follow us at a later date. 20R-654, 41C-98 and others, of the expedition which found my dead body near the planet earth, are also staying on Zor to join the main fleet. Of the original expedition, 6W-438, 473G-90 and 56F-450 will accompany me aboard my ship. The rest under my command, including both machine men and organic Zoromes, are new to me.

"I, too, have been placed in command of a vanguard ship," said Bext. "It is a dangerous business. We must sound out the offense and defense of the enemy world and lay an attack in preparation for the main fleet of Zoromes. We are already looked upon as martyrs, a veritable death-battalion."

"Zora told me that you had been given command of a ship because of your efficiency in the same capacity before your brain transposition," said the professor, steering the conversation from the unpleasant prospects of their mission which Bext had been uneasily con-

templating. "Zora is to be one of your artillerymen."

"YES, 119M-5 is now being given the finishing touches on Ipmats in regards to the finer points of space gunnery," was Bext's reply. "But as to my efficiency—why did I ever let the Mumes capture my ship and take it back to Mumed along with me? That could scarcely have been efficiency."

"But there were several ships of the Mumes," the professor reminded him. "They were all bent on one carefully laid scheme—capturing your ship and taking you back to Mumed alive. The Mumes waited until they found your ship isolated from the rest."

"Few of their ships have approached our system since then, thanks to the space mines."

12W-62 alluded to destructive projectiles left drifting in space about the six world's of Zor's planetary system.

Necessity is the mother of invention, and the space mines were a recent contribution by an experimenter of Zor. Professor Jameson had remarked at the outset of hostilities that the result of the space war would narrow down to a battle of wits, a siege of brain power. Millions of the mines had been turned out and were sent spinning on orbits about the six worlds of Zor. Possessed of a substance which nullified their attraction to the ships of Zor, they existed as a menace to the Mumes. The most deadly feature of these invisible destroyers was the fact that they were too small to register rapidly upon the detectors of the Mume ships. Added to this, the mines sped unerringly for any large object which came within a radius of five thousand miles.

"But it is only a matter of time when they will discover the secret of the mines and the ability to avoid them as easily as your ships do," the professor

prophesized. "See how easily we have counteracted the destructive rays about Mumed. Our ships bounce off their destructiveness."

"That fails to allow our ingress to Mumed past the barrier rays, however. We cannot as yet penetrate them with either space ships or power beams."

"We will accomplish that in time," said the professor, "and, besides, they cannot project beams through their own blanket of rays."

"That is true," 12W-62 agreed. "Scout ships have reported that tunnels are left open momentarily for them to unloosen destruction from the planet itself. The latter mode of offense is what they seem to depend upon mostly, for their fleet is small in comparison to ours."

"Have you heard of their locator veils?"

"Locator veils?" echoed 12W-62 in query. "What are they?"

"This is nothing definitely established as a truth. It is little more than rumor. One of our scout ships reported having lost complete track of several near by enemy ships. They disappeared from the detectors entirely, then reappeared."

"Would it stand to reason that their ships possess the faculty of throwing out such a veil in order to confuse the detectors of our ships?"

"Either that, or else the functioning of the scout ship detectors was faulty at that particular time."

"Our ships still possess the advantage of invisibility," reminded Bext, "though their detectors and knowledge of our accomplishment have cut down the advantage considerably."

"No one knows that any better than I do," said the professor. "What a time our ship had trying to avoid the hunting ships of Mumed while we were hemmed in from escape by their barrier rays."

"6D4, the tyrant of Mumed, is bent

on imperialistic powers which know no bounds," 12W-62 observed. "That, I learned well during my incarceration on Mumed."

"If 6D4 and the nucleus of his empire builders could be destroyed in one stroke, I believe the end of the space war might be accomplished in a single encounter," the professor surmised. "The Mumes are being enthused and goaded by 6D4 and his associates. Take their leaders from them, and a few defeats would bring them to terms. Aside from 6D4 and other figureheads among the machine men of Mumed, the Mumes are well beneath our intellectual plane, and without a directing intelligence their power is broken."

"It sounds easy," Bext admitted. "Yet 6D4 is also aware of this fact. As I have stated before this, during my captivity on Mumed, I learned by prying into covert conversations of various Mumes, who believed their thoughts to be well guarded, that 6D4 was planning a secret, underground city, a subterranean reclusé, as it was called in ancient days, where he and his principal consorts can direct the affairs of the planet."

"If we could only learn where this secret city is located," the professor mused.

"Even so, none of our rays could penetrate to the planet, and sneaking inside of the ray barrier with an invisible ship is out of the question, now that the Mumes have learned our secret. They are on the watch at all the ray-lock entrances for just such an act as that."

We might be able to disintegrate Mumed as our expedition did the world of the dying sun far out in space, but there is the neighboring planet of Ablen to consider. It would probably mean the death of every inhabitant, innocent sacrifices of the Ablenox to the fury of two warring worlds."

"The Ablenox are not exactly neutral," said 12W-62. "They are neutral in actions, yet their sentiment leans in our favor, for the Mumes have treated them badly."

The planet Zor grew in size as their space flier left the vicinity of Grutet and headed homeward. Grutet and Zor were nearly in conjunction with the sun, Zor being the outer of the two planets. Beyond the orbits of Zor lay the outermost planets of Dompt and Ipmats, while within the orbital circumference of Grutet lay Poth and Trach, the two planets nearest the sun. Zor was the home world, the remaining five planets were under more or less artificial conditions, some of them inhabited by the organic Zoromes and nearly all of them peopled with the machine men.

The professor and Bext left the little space-flier in charge of several organic Zoromes after coming to rest in the shadow of a large city. It was obvious where the idea of metal tentacles had originated in the minds of the machine men. The organic Zoromes possessed six tentacles, a pair branching from each side of their bodies, a single tentacle in front and one in back.

The organic Zorome, who moored the ship securely, was typical of the flesh and blood species which supplied the machine men with perpetual material for new converts to their ranks. Accidents occasionally happened to the heads of the machine men, their one vulnerable spot which, unlike the rest of their metal bodies, could not be replaced. His six tentacles grew long and tapered to tiny tips, while from the lower section of his body grew four short, unjointed legs which terminated in three-pointed feet. A fringe of membrane grew across his head from cheek to cheek, while beneath and in front of this a prominent forehead shaded a pair of extremely large eyes, extremely large from the profes-

sor's earthly standpoint to say the least.

The Zorome possessed no nose whatever, though he displayed a diamond-shaped mouth. Breathing was effected through valves situated at the base of the fore tentacle. At a certain state of development, when a lifetime had commenced to wane, each Zorome was given a brain transposition to a machine.

Preparations were nearly complete for the first hundred or more ships of Zor to leave for the system of Mumed. This was the vanguard of the Zoromes, ready to unloose the first salvo of space war at the Mumes. Secure in the belief that their planet was invincible behind its protective covering of rays, which could not be penetrated by space craft, meteor or message, the Mumes had invited combat in the shadow of their own world.

The initial expedition to leave for Mumed was to test the space fortifications of Mumed and also learn of their offenses, a deadly errand of uncertainty. This time, they spurned invisibility of their ships, for this advantage meant little in space where ships were picked up by detectors. The advantage of invisibility lay solely in cruising low over the planet among the cities of the Mumes, and this, under the circumstances, the Zoromes did not expect to do.

The main fleet, representing thousands of Zorome fighting craft, would follow later after the experimental expedition of the first hundred ships. Departing from the outermost planet of Zor's system, Ipmats, cold, dimly lit by a far off sun, and the home of biting, raging storms, the ships of Zor spread out and raced off into the cosmos, towards the neighboring system of the Mumes. Ipmats grew small behind them, its horned crescent dwindling to obscurity, the sun of Zor becoming smaller, a tiny, glittering point of light, a star among stars, brighter only because of its much closer proximity.

UNDER Professor Jameson's command were 6W-438, 473G-90, 56F-450 and others among the machine men of Zor, the last a stranger to him. Besides the machine men, there were four organic Zoromes, the entire crew numbering fifteen. There was room for more aboard the ship, but not too many were being sent on this initial flight into the enemy's territory, for it promised to be a trip from which few might return.

The sun of Mumed loomed close as the ships of Zor headed into the system past the outer planets. Ablen was in opposition to the sun as they passed its orbit. Beyond, Tanid's rough surface was visible in the thin, ragged crescent of its daylight dawn. Farther beyond and to one side lay Mumed.

The ships of Zor watched their detectors carefully for signs of enemy scout ships ready to attack and issue an alarm of their approach, but apparently they were not yet near enough to Mumed for an encounter with scout ships. The Mumes did not protect their entire system as the Zoromes did. The population and facilities of Mumed were concentrated wholly on one planet. It was their intention to spread their power and influence to other worlds after the eagerly anticipated downfall of Zor was consummated.

The ships of Zor moved onward. The first realization of impending disaster came in the disappearance of a ship far to the edge of the widespread formation. It went out in a brilliant flash which left its recent position on the detectors of its sister ships a blank spot.

"A long range shot!" was 6W-438's lightning resumé.

"If so, they were lucky!" the professor exclaimed. "There's no ship on our detectors within a half million miles!"

"What about a small scout flier?" queried Hodze, an organic Zorome. "They register only at nearer distances."

"Two hundred thousand miles, then, at the most," stated the professor. "That is a long ways for accurate shooting at erratic moving targets such as our ships. If the Mumes are——"

Three more of the Zorome ships disappeared rapidly, one right after another. A ship not far from the professor's craft was struck.

"That's no chance!" cried 56F-450. "That's accuracy!"

To the dismay of the bewildered Zoromes, another ship burst into pieces. Immediately afterward, a graze shot tore a ship half apart, leaving it behind the main body of space craft which rushed onward. Two ships dropped behind to pick up the machine men who still survived among the wreckage. Organic Zoromes, unless space-suited, were doomed in this instance.

"Do you suppose we are being fired upon from Tanid, 21MM392?" came the query of 142V-06 from another ship close by. He referred to the uninhabited world between Ablen and Mumed.

From the professor's memory leaped a recent conversation with 12W-62. The locator veils. That was it. He immediately radiated his opinion of the situation to 142V-06 and the other ship commanders. He realized, with the speed of thought born of dire necessity, that, to find the ships of Zor the Mumes must penetrate with detector beams their own locator veils.

"PUT on the rays! Fire back along their detector beams! Place our own detectors in ultra-reverse; then fire back whenever they register!"

Several more of the ships were being shot out of space by the undetectable enemy. Most of the shots were direct. Others were off-center on graze shots. In the latter case, the survivors were quickly transferred to other ships. One thing, of which the Zoromes were now

positive, was the fact that to find them the nearby ships of the Mumes could do so only by penetrating their own locator veil. This gave the Mumes but a slight advantage beyond the surprise of their first attack, for the Zoromes were releasing charges of deadly power, whenever a detector-beam found them through the locator veil.

It was a mark of credit to 6D4, this locator veil, which was a direct retaliation to the treatment of invisibility the Zoromes had given their space ships, but 6D4's mental genius had reckoned without consideration of the resourceful characters of the Zoromes. The space encounter was no longer as one-sided as it had first proved to be. Though his detector screens remained blank, other than for the location of his own ships, the professor, through a transparent port of the observation room, saw the effects of the ultra-reverse attack. Far out in space, tiny flashes, like the distant travels of meteors through the upper air strata of a world, occurred intermittently.

"We have drifted off the main course of the fleet!" cried one of the machine men.

The professor returned to the control room. It was so. Their faculties had been too engrossed in wiping out the menace which had threatened them from the undetectable ships to notice their wide divergence from formation.

"Circle back!"

The screen which revealed to them the location of their own ships went suddenly blank. For a moment, Professor Jameson was both perplexed and apprehensive. Then he realized. His ship was cut off from the main body by a locator veil of the enemy. His ship was in the midst of the veil.

"Slow down! We may be close to one of their ships! Stand ready to fire back along their beams!"

A crashing jolt sent Professor Jameson to the floor of his space ship. His metal head clanged hard against the floor, and he lost his senses momentarily. Recovering from the shock, he found himself surrounded by his companions. The organic Zoromes wore space suits. Tight fitting, scarcely noticeable, temperature equalizers were worn by the machine men. The professor, too, found himself equipped with one. He had been "out" longer than he had thought.

"What happened?" he queried. "Were we fired upon?"

"We collided with a ship of the Mumes. You were knocked senseless. A hole has been torn in our craft, and the air has leaked out slowly."

"Is the control room intact?" was the professor's swift interrogation.

"It is partly demolished," came 56F-450's discouraging reply. "We are helpless."

"Where are we now?"

"Drifting in the direction of Tanid."

"At what speed?"

"That is unknown. The gauges were destroyed."

CHAPTER II

PROFESSOR JAMESON glanced hastily out of the nearest port. Tanid, the world between Mumed and Alben, loomed large. They were far removed from the scene of recent conflict. The professor made his way to the wrecked control room. A rough hole yawned in the center of an oblong indentation, permitting the light from brilliant, far off stars to shine through the gap. He wondered if the enemy ship, which they had rammed, had fared the same.

The entire crew stood by his side in the wrecked control room of the helpless craft, ready to follow his least sug-

gestion. For a moment he pondered the situation. There seemed little to do for the time being except to trust to fate. The machine men and their organic brethren were not confirmed fatalists, however, even though they recognized the numerous byways of destiny.

"We can land on Tanid, if our drift is in that direction," said the professor. "Of course, there is a danger of crashing in the event that our gravity brakes prove unmanageable. I wonder if——"

The rest of the professor's contemplation was interrupted by the vibrant thought waves of 596L-29, whose discovery gave a new aspect to the situation.

"An enemy ship is coming close!" was 596L-29's startling announcement from the place where he peered intently through the jagged rent in the control room. We are lost!"

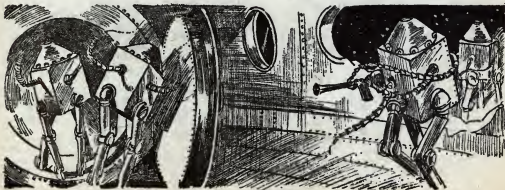
"We are if they see anyone aboard!" the professor exclaimed. "Out of sight—quick—everyone! Put a guard on your thought waves!"

The Zoromes hid themselves, Professor Jameson fearing at any moment a destructive ray might flash across the wrecked ship. The suspense was nerve wracking even to the machine men, and especially so to the organic Zoromes. The Mumes, seeing the damaged ship without traces of occupancy, might believe it to be a derelict of the dead. So the pro-

fessor reasoned from all points of view.

Peering cautiously from his spot of concealment, 6W-438 saw something which not only surprised him but set his brain aflame with possibilities. Covertly, he signalled the professor and the rest, apprising them of the fact that machine men of Mumed were preparing to board the wrecked space ship. Several of them were heading for the rent in the ship's side, the most obvious and least complicated mode of entrance. The professor rapidly endorsed the plan which sight of the Mumes had occasioned in the mind of 6W-438. The Zoromes hid themselves.

On board the ship of the Mumes, the organic pilot and several of his companions waited for their mechanical brethren to return from the wreck which had drifted across their detector plates. Initial impulse to destroy it had yielded to the desire to search it for secrets of Zorome defense and offense. It was queer, thought the eight-legged Mume, that he had received no communication from his seven metal comrades who had entered the wreck. Possibly, he opined, this might be due to a mental nullifier of the Zoromes, another of their equipments for their space ships. That was well. The metal Mumes, who had gone aboard, would learn its secret and 6D4's empire-builders would boast another advantage over the Zoromes.



The departure from the wreck.

FINALLY, a metal figure stood limned in the jagged hole of the wrecked space ship. Behind the first, appeared another. The two machine men launched themselves with gentle pushes from the wreck straight for the air lock. Five more left the wreck and swiftly followed. They were strangely silent, much to the increasing curiosity of the organic Mumes who had been left on board. Rapidly, the pilot worked the controls of the air-lock to give the returned machine men an entrance.

The return of all seven brought forth a query from the artilleryman, four of his eight appendages hanging eagerly over the ray release, direction indicator, distance estimate and power control.

"Shall I destroy the derelict?"

"No," came the brief reply.

The machine men hurried into the space ship clutching their metal-eating pistols. They also carried several of the ray guns belonging to the Zoromes.

"What did you find?" asked the pilot, still watching the wreck.

There was no answer. Instead, metal tentacles gripped the pilot by his neck and slowly twisted his head off, pulling him from his seat where he struggled and kicked convulsively for an extended moment on the floor of the space ship. Meanwhile, more of the machine men had attacked the stupified artilleryman and his companions.

"Take over the controls of the ship, 56F-450! The rest can come out of the wreck now!"

Following this last remark, more machine men, this time in company with organic Zoromes who were space-suited, made their way from the derelict to the waiting ship of the Mumes.

"We took over the ship without a single loss, 21MM392," 6W-438 enthused. "How easily we overcame the machine men of Mume with our ray guns, when they found that we had

made ourselves immune to their metal-eaters since our last trip to Mumed."

"Where shall we go?" 56F-450 queried.

"We shall join our fleet if we can find it."

56F-450 read their position. They were far off the course the ships of Zor had taken. In the captured craft of the Mumes, the Zoromes headed for the fleet from which they had recently become lost. Professor Jameson believed the ships of Zor to be somewhere out in space at right angles to Tanid.

"They will fire on us!" warned 6W-438. "This is an enemy ship!"

"When we come within range, we must communicate with them," stated the professor.

They found their own fleet sooner than they expected. 56F-450 soon picked them up on the detector plates. A good many of the ships had been destroyed in battle with the Mumes, or else the initial fleet had broken up into smaller contingents, the professor found.

"Let them know who we are!"

From 2B-991 at the communicating signal system, an emanation of mingled surprise and dejection reached the professor.

"The communicators are not attuned to our own space craft—only to the ships of the Mumes."

"Look!"

56F-450 pointed to the detector fields where small dots were closing in upon their position.

"Battle formation!"

The professor grasped frantically at an overhanging lever above the controls. Instantly, the dots on the detector field disappeared. Professor Jameson had spread the locator veil.

"That was close!" cried 6W-438. "They think us enemies! We shall be blown to bits if we stay here!"

"Is there no way we can tell them who we are?" asked one of the organic Zoromes desperately.

The professor expressed negation. 56F-450 needed no instructions. The situation was clearly diagnosed by all. They were in flight, fleeing from a frightful danger at the hands of their own comrades, who were intent on blowing them out of existence. Still in the shadow of their own locator veil, they shot the ship clear of the menacing ships, well beyond the range of detection.

"There is only one thing for us to do, unless we wish to head back for Zor, and that would be just as difficult in regard to our safety as approaching our own fleet here," offered the professor. "We must play a lone hand, posing as Mumes. Both fleets will be against us, and we shall be doubly in danger, yet it is the most we can do."

"Where now?" asked 56F-450.

"Head for Mumed."

They were well on their way past Tanid when an amplified thought wave forced itself in upon their consciousness.

"What are organic Zoromes doing aboard your ship? Are they prisoners? How did you get them?"

For a moment, the Zoromes stared at each other dumbfounded. There came another query.

"What are your letters?"

The professor, with waving tentacle, pointed mutely at the detector fields. Four ships were shown upon it.

"Mumes!" cursed 6W-438. "Now we are in for it!"

"How can they see us?"

"The televisor! Snap it off!"

56F-450, unfamiliar with the ships of the Mumes had overlooked this tell-tale possibility. Quickly, he broke visual connection with the four ships.

"Turn on your televisor!" came the snapped command. "Come alongside us at once!"

"Throw out the locator veil!" was Professor Jameson's expression of his disregard of the Mumes.

56F-450 did so. For a moment, the spots on the detector plates faded from view, but they soon returned in full strength. 56F-450 looked to see if the lever had slipped back. No. The locator veil was spread to its full intensity. The Mumes evidently knew how to nullify its baffling effects.

Professor Jameson watched the four ships on the detector field. They were in close pursuit.

"Take a turn around Tanid!" he ordered. "Then head for our fleet!"

"We shall be caught between two fires!" warned 6W-438.

Tanid loomed large. The ships of Mumed crept nearer. Their operators, more familiar with their own ships than the Zoromes, were getting better speed and facile maneuverability. Desperately, 6W-438 opened fire on them as they came closer. There were no results. Unharméd, the four pursuing space craft crept nearer. They made no attack.

"Nullifiers," the professor summed up the situation. "It would certainly be a valuable bit of information for us. They are able to nullify their own attack but not ours. If we only had one of our own ships now."

"If there were only some way of coming to grips with them!" exclaimed 6W-438 vehemently. "We are entirely at their mercy!"

"They could have annihilated us before this," mused the professor. "They want us alive for some reason or other."

"Like they wanted Bext!" was Hodze's reminiscent remark.

The Zoromes had shut off the communicator. The locator veil, ineffectual as it was, they also turned off. Suddenly, 56F-450 felt a strange influence guiding the ship. The control no longer responded to his touch. The Mumes

held them in their power. Their speed was rapidly decreasing, and though 56F-450 fought to retain control it was no use. He announced their condition. Soon after, there came a metallic bump which shook the space ship from stem to stern. The Mumes had clamped hold.

Professor Jameson looked at the detector plates. The foremost of the enemy was at grips with the space ship manned by the Zoromes. The three remaining space craft lingered in the rear.

"They will probably tow us back to Mumed as prisoners," ventured 93S-404.

"They are coming aboard!" cried Hodze, pointing to several Mumes entering the air lock.

"Keep them out!"

56F-540 seized the controls governing the air lock, yet in alarm and consternation the Zoromes saw the door of the air lock rolled aside.

"There is no use!" exclaimed 56F-450. "They have the operation of the ship entirely in their power!"

THEY stood waiting with weapons ready, waiting for the invading Mumes. The first machine man through the door was engaged by 2G-64. Behind the first came others from the enemy ship. The Zoromes rushed for the entrance of the air lock, weapons unleashed, ready to fight and hold off the Mumes, while those few who had already entered were engaged with machine men of Zor. The Mumes were evidently confident of recapturing their own ship, reluctant to destroy it, even though capture meant sacrifice. The Mumes possessed less ships than the Zoromes, one of the reasons they contrived to draw the war to their own neighborhood.

There came a sudden, shrill warning from one of the other ships which lurked close. It came direct, not from the communicator, for the latter was closed off.

"Zorome ships are coming!"

Professor Jameson and his companions experienced a sudden thrill of enthusiasm which was short lived. A thunderous, jarring roar shook the embraced ships. They were torn apart and hurled about in space. One ship was utterly demolished. The ships of Zor, creeping up unsuspectingly upon the five enemy ships had found an easy target in the two ships clinging together. This had inspired the prospect of a double hit.

The ship containing the Zoromes and their combatants spun dizzily towards Tanid, its occupants dazed, dead or else dying. A large piece had been torn from the cruiser. Tanid grew larger, its topography clearly distinct, the space ship falling rapidly into the planet's attraction, unnoticed by the handful of Zorome space craft which had sneaked upon the Mumes, catching them unawares.

Tanid possessed an unbreathable atmosphere to both of the organic species, Zoromes and Mumes. Respiration on this world meant a quick end. Entering the thick envelope of air, the ship reduced its mad speed. Several of the gravity brakes were still in working order, and the increasing air pressure automatically threw them into action. The functioning of the gravity brakes, however, due to the damage done by the Zorome sharpshooter, was erratic, and the ship came down none too lightly in a mountain pass just outside the daylight-half of Tanid. The light was gradually creeping in the direction of the fallen ship.

An organic Zorome raised himself amid the silence and wreckage and gazed upon devastation and death. He looked up to see the stars twinkling at him through a ruptured seam above his head. Small wonder that he had not been crushed and mutilated as were many

around him. A stillness of mind persisted all about him. A grayness suffused the sky. Dawn broke quickly on Tanid. In the gathering light, gloom sped swiftly, and the Zorome looked about him.

Machine men lay broken and smashed, their metal legs and tentacles twisted and dented into grotesque, unnatural attitudes. Mixed with these were the slumped, inanimate forms of organic Zoromes who had met their end, even as had been grimly foreboded when the fleet left Zor. Hodze, the organic Zorome, found that two of his tentacles were broken. They pained him with dull and throbbing persistency and stabbed at his consciousness whenever they moved him.

Not far from him lay 21MM392, his head, half ripped from his metal body, having torn away a section of the cube's upper mechanism. A leg was missing, and two of the remaining three lower limbs were bent in under the cubed body with its jumble of twisted tentacles, one of which was plainly torn free of the metal body. With a confusing and jolting realization, Hodze saw that not all the machine men were present. Several had evidently been lost in space at the impact of the shot which had torn away a large part of the ship. They may have drifted away from the wreck while it rotated towards Tanid.

EXERTING his mental perceptions, Hodze sent a call to the machine men. Perhaps some of them still lived. There was no reply. Many of the machine men lay with their heads crushed or dented. There existed no doubt but what they were dead. Others among the machine men he believed might be alive yet temporarily stunned. Again he marvelled at the fact that he, a flesh and blood Zorome, had so miraculously escaped death in this terror of destruction which had swept over them.

His first thoughts were of his com-

mander, 21MM392, whose metal body lay wrecked a short distance away. Slowly, he hobbled over beside him, conscious that two of his lower limbs were bruised and sprained. He sought vainly for communication with the fallen machine man, searching the other's mind. Of one thing Hodze was certain. The machine man lived. Yet his brain was in a dazed, unconscious condition. 21MM392's thought impressions were actually fantastic, bordering on delirium. Scanning the professor's mind, Hodze received mental perceptions of weird, four-limbed people on whose heads there grew, in place of membranous fringe, a thick, hirsute growth. They wore strange accoutrements, too, of varying shapes and colors. They were evidently characters from some queer world which 21MM392 had visited in the past, Hodze reflected.

The sun topped the horizon, reflecting brilliantly against several tiny specks far up in the atmosphere of Tanid. Whether the approaching space ships were friends or enemies, Hodze knew not, but he suspected strongly that they were Mumes. It was not like any of the Zoromes to land on Tanid. The Mumes probably possessed lookout bases on Tanid, on this planet used only by machine men. If they were Mumes, he knew what to expect. It would mean a quick end for him and those of the dazed machine men of Zor who still lived.

The thought suddenly struck Hodze that a few of the Mume machine men might be alive. Like 21MM392, they perhaps were only unconscious. As if to substantiate Hodze's opinion, one of the Mume combatants who had recently entered the ship while out in space staggered ungainly upon his bent legs, then fell backward again where he attempted to lift himself with twisted tentacles.

Hodze possessed an astute mind, and an idea suddenly occurred to him which

made him snatch up one of the metal eating pistols of the Mumes. Would the Mumes who came in the approaching ships, if they really were Mumes as he suspected, perceive the vague thought imprints on the minds of 21MM392 and the others who lived, and distinguish them as Zoromes? He doubted it. The mental perceptions of the Mumes were below the standard of the Zoromes. And after all, this was a ship of Mumed.

Again, the metal Mume tried to rise, slowly collecting his confused thoughts. Hodze, his mind set, levelled the metal eater and fired. No sound issued from the pistol. There was no flash, no ray of any kind, yet upon the metal head of the floundering Mume there appeared a dark, round cavity which spread and grew deeper. With several spasmodic movements, involuntary, the Mume fell backward, dead. The metal eater had penetrated his brain pan.

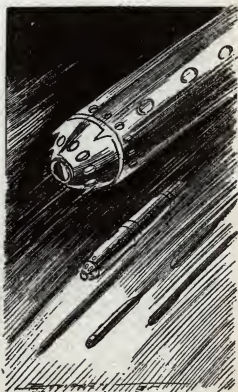
The space ships fell closer, flitting across the vision of the space-suited Hodze who glanced upward through the ruptured hull of the space ship. The Zorome saw that his suspicions were confirmed. They were Mume ships coming to investigate their fallen cruiser. He knew he must hurry if he were to destroy the remaining Mumes. He looked confusedly among the recumbent machine men. They were so much alike that he could find no distinguishing characteristics to differentiate between Mumes and Zoromes. He had recognized the unconscious 21MM392 only by familiar scratches on his metal body. Ordinarily, machine men identified each other mentally.

Hodze, for a moment, was at a loss as to what he might do. He dared not fire at those metal heads he suspected as belonging to Mumes because of the omnipresent doubt that they were possibly Zoromes. Revelation sprang suddenly out of his subconsciousness. The

Zoromes had immunized themselves to the metal-eaters of the Mumes. He had been too engrossed to have thought of it before. Without further hesitation, he levelled the pistol in turn at all the metal heads in the wrecked ship, regardless of friend or foe, or whether the heads were smashed, only dented or intact. The metal heads of the Mumes were immediately susceptible to the metal-eater, while the heads of the machine men of Zor remained unaffected.

The ships of the Mumes had landed, and now Hodze, who had finished his grim work, waited for their arrival, a definite idea in mind, to terminate his work. Throwing down the metal eater of the Mumes, he seized one of the ray guns used by the Zoromes.

The investigating Mumes, entering the wreck, stumbled over two of their num-



The Mume fleet going to the wrecked cruiser.

ber in the air lock, whom Hodze had overlooked. At the time the two locked ships had been fired upon by Zoromes these two Mumes with another of their companions had been situated in the air lock, preparatory to entering. A wide, gaping seam in the floor of the air lock testified to the probable, distant whereabouts of the third metal Mume.

Without stopping to distinguish whether the two machine men were alive or dead, the Mumes hurried into the main compartment of the wrecked space ship. They were just in time to see a space-suited Zorome level a ray gun upon the wrecked body of a machine man whose head was partly torn away from his metal body. The ray flickered over the cubed body in the direction of the head, leaving a torn and fused path. Before it reached the helpless machine man's head, one of the Mumes released a charge of destruction, which withered the organic Zorome into charred, smoking residue.

Of all the martyrs to the cause of Zor during the space-war with the Mumes, there was none greater than Hodze who had chosen for himself a brilliant end.

CHAPTER III

WHEN Professor Jameson collected his senses, he was no longer in the wrecked space ship. Without tentacles or legs, he stood on a shining, new cubed body to which his metal head was fastened. Looking about him, he surmised that he was in the assembling room of an outfitting department on Mumed. Almost instinctively, he realized that he was on Mumed, and he immediately placed a guard on his thoughts. How had he come there? Did the Mumes know him for a Zorome? This was not the metal body he had known. It was a new one. The last thing, he recalled, was the jar-

ring crash aboard the ship of the Mumes following a report that Zoromes were coming.

A metal Mume approached him, carrying six metal tentacles, his body girdled with various tools and implements. Behind him came another Mume carrying four metal tags. The professor's brain was alive with questions, yet resolutely he repressed his curiosity.

"How do you feel?" queried the Mume. "We thought you would come around all right."

"I seem to be all right," the professor replied.

"You must have received quite a heavy rap, but you are lucky. Most of you on that ship either died in the crash on Tanid or else were killed by one of your captives, who survived the crash."

"We were attacked out in space by a ship of Zor," was the professor's honest statement. "It was then that I became bereft of my senses, for I recollect nothing which happened after that. What of this captive you mentioned?"

The Mume told him how help had arrived just in time to save him from the ray gun of an organic Zorome. This fact puzzled the professor. It failed to make sense. The Mumes really believed him to be one of them. Very well, he would let them remain thinking so. But the Zorome who had tried to kill him. Had he, too, believed the professor to be a Mume? He dared not ask too many questions.

"Am I the only survivor?" the professor ventured.

"No—three of you survived—4N7, 2H6 and yourself. Their mechanical injuries were similar to yours."

"Where are they?" the professor asked, masking his sudden apprehension.

"2H6 has been placed with one of the ships which came to investigate the wreck. All he needed was two tentacles and a leg. He recovered his senses

quickly. 4N7 is in the subterranean city of 6D4, where you are soon to be taken."

Professor Jameson did some rapid thinking. 2H6 was aboard a space ship. He had little to fear from him. He might never come back to identify the professor as a machine man of Zor. But 4N7 existed as a menace to his safety. 4N7, on seeing the professor, would brand him as an imposter, stating that he had never been aboard the ship of Mumed at all. And the professor knew that he was to be taken where 4N7 was now located, the secret city of 6D4. So the rumor of the subterranean city was an actual fact. The professor was not surprised at the matter of fact disclosure. It was evidently a development of the Mumes since Zoromes had last visited the enemy world in two invisible space ships.

"Who are you?"

This question took Professor Jameson by surprise, but he answered quite readily, "9Y1".

With new limbs and a new body, the professor became known to the Mumes as 9Y1, apparently one of their number. An airship whisked him rapidly towards the secret city in company with several more machine men. It had been the initial intention of the professor to escape at the first opportunity, but now that the Zoromes would not be long in starting their great drive, he readily saw that his secret presence on Mumed might serve for a greater purpose than if he were in command of a ship in the space fleet.

The airship dropped swiftly for a section of open country, a bit too swiftly for safety it seemed to the professor. He looked sharp for signs of a tunnel opening but saw none. Evidently, it was cleverly concealed. The ground rushed close. Still the airship clung to its swift momentum without abatement

of speed. For a moment, fear clutched at the professor. He felt sure they must strike unless their terrific pace was slowed instantly. Even then, the sudden shock would throw them off their feet. And then they struck. But there was no impact. They kept going. In stupefied surprise, the professor stared out into translucent grayness. A near by machine man sensed his amazement.

"IT'S evident you've never been in the city of 6D4," he said. "Everyone who enters it in this manner for the first time is stricken with wonder. Where you believed you saw ground there was no ground, only a cavity, the entrance to the city. The grayness you notice outside is a gas with which the upper reaches of the tunnel have been filled. Seen from above, the gas gives an optical illusion of a complete landscape."

Professor Jameson marvelled at the cunningness of it. 6D4 certainly had the service of talented minds. He felt that he would have to guard his thoughts more carefully against these more intelligent Mumes.

The tunnel was approximately a mile in depth. The same Mume who had explained the tunnel's entrance to the professor now took it upon himself to explain the tunnel's armament which lay ready for any hostile ship that might contrive to elude the rays surrounding Mumed and find the secret city.

"Destructive rays line the tunnel, ready to be unloosed instantly. Every ship which drops into the tunnel is looked into by an invisible light which reveals everything and everyone."

Quite unexpectedly, the ship floated down into the city. The metropolis of 6D4 was built on the floor of an immense cavern. Professor Jameson estimated the proportions of the cavern to be nearly ten miles in length, half as

wide, and nearly a mile high. It was brilliantly lit with sun lamps, like those on the inner side of Grutet's chromium shell. The airship headed for a high building, coming to a stop on its landing roof.

"This is the barracks."

Professor Jameson had been in constant fear of revealing his ignorance of their ways, but the Mumes seemed to take it for granted that a newcomer to the subterranean city would act a bit queer, the routine there being as different as the location and appearance of the city.

In the many nightless days which followed, the professor learned much. He found, however, as a general thing, that the movements of the Zorome forces were kept secret within the city. Only now and then did information leak through some high officer and into the barracks. Professor Jameson had not been there very long before his general aptitude was noticed, and he was promoted in rank. His only fear was the possibility of one of the other two survivors of the wreck on Tanid meeting him and denouncing him as an imposter. The Mumes seemed to possess no comprehensive records of their machine men, and for this the professor was thankful.

One important discovery the professor made was the fact that the Mumes no longer feared the space mines which floated about the planets of Zor. The Mume ships were equipped with metal hollow spikes, needle sharp. Whenever a space mine started for one of these ships, the nearest spike directed that way became excited by the proximity of the approaching space bomb. A sufficient amount of counter-explosive was automatically ejected from the spike to meet and explode the onrushing mine several hundred miles away.

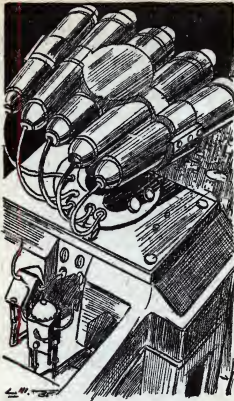
This advantage had been obtained through dangerous experiment. One of

the Mumes had braved the possibility of instant annihilation and had approached several of the mines with special apparatus to perform the ticklish business of snaring them. Brought to Mumed, they were placed under careful analysis, the ultimate result being the sharp spikes on the space ships of Mumed.

Time passed. Scanty reports which filtered into the city of 6D4 disclosed the fact that the Zorome fleet was hammering away at the strongholds of the Mumes and battling with the latter's ships wherever they were found. So far, it had been a blocked deal, neither side gaining much. The Zoromes, however, were on the offensive. Professor Jameson knew that his fleet was growing larger all the time as the various contingents joined it from Zor. The entire forces of Zor would be marshalled, he knew, when current experiments were finished, in regard to the impregnable barrier of rays which guarded Mumed so effectively.

He was certain that none of the Zoromes had learned the secret of the underground city, and here lay the crux of the entire situation. Knowledge of the city's location would eventually bring about a concentrated engagement fit to test the supremacy of the two factions. The skirmishes and minor battles which were taking place amounted to little, as far as the outcome was concerned. The Zoromes desired to end for once and all the menace of 6D4 and his empire builders. On the other hand, 6D4 was content to hold off the Zoromes at the very gateway of his world, until he felt that they were maneuvered into a position where it would be opportune for him to strike swiftly and deadly. In the meantime, he planned to hold them as powerless and ineffective as possible.

Professor Jameson looked for an opportunity to communicate with his fellow machine men, but no chance offered



Machinery producing the enveloping ray.

itself. He waited patiently for the time when he would be sent out with a space patrol. 6D4 was keeping much of his fighting strength in reserve, however, and the professor was among these reserve forces.

ONE day, a superior officer dashed into the barracks of the subterranean city. Professor Jameson and the other officers were galvanized into excitement and the action by his electrifying announcement.

"The time has come!" he cried. "All is ready to prepare for delivering the great blow!"

Then followed graphic relation of 6D4's mighty plan which was to stagger Zor's power to its very foundations. The great fleet of Zor was to be destroyed in one fell swoop with the latest brain

child of 6D4 and his clever minions, the enveloping ray.

"Are we to be sent into space to engage the enemy?" the professor inquired hopefully, looking for an opportunity to quit the subterranean city and notify his fellow Zoromes of their impending danger.

"Some of us!" the officer replied. "But you're not! I have a safer and much more important position here in the city for you!"

The professor's hopes fell. In the inner recesses of his own mind, he was desperate. He must get out of the city and warn his fleet. The commanding officer was giving orders. Men scurried everywhere, preparing to take off into space for the big battle, ready to fulfill the initial portion of 6D4's plan. Only Professor Jameson and a few officers were left.

The commanding officer took the professor to a balcony overlooking the subterranean retreat of the Mumes and pointed across the city to a high domed building, the top of which was shaped into a gigantic cylinder. On four sides stood tall minarets, rising to three-quarters the height of the cylinder superstructure of the central dome. The minarets were joined by four narrow bridges.

"There is the weapon to destroy the fleet of Zor!" he exclaimed with a dramatic wave of his metal tentacles. "And you are to have a place at its mechanism, to help in the destruction of the enemy fleet!"

"Me?" Professor Jameson felt overwhelmed at the revelation. "Am I to unloose the destruction?"

"Not you alone," the commander informed him. "There are many over there like you. 9G2 has called for an assistant. I recommended you because of your aptitude. We'll go over there now."

Entering an air car, they were taken to a small landing platform near the minaret where the professor was to assist 9G2. On the landing platform beyond the next minaret, the watchful eyes of the professor perceived a small space flier. The professor, entering the minaret with the commanding officer, was confronted by 9G2 whom he learned was, an old scientist of Mumed before his brain transposition to a metal body. The commander left, and the old scientist commenced explaining the surrounding mechanism to the professor.

"This produces the enveloping ray," he explained, waving his metal tentacles in a gesture which took in the four minarets and the huge, central structure. "Most of the operators are in that dome. The rest of us are stationed in these minarets, operating the subsidiary power supply, as we are directed from the main control chamber over there."

Professor Jameson looked down into the dizzy depths below him. 9G2 continued.

"For the purpose of better concentration of our mental faculties, these minarets have been made thought-proof. In this way, we shall suffer no interruptions to our work when the supreme moment arrives. We are stationed here together. 7X5 is stationed over in the minaret to our left along with his assistant, and on the other side of us in the minaret to our right 4N7 is posted alone. Diagonal to our——"

"4N7?"

"Yes. Do you know him?"

"Why—I have heard of him—that is all."

"Come, I'll take you over to see him."

"Not now," the professor expostulated. "I wish to learn my duties."

"Sure enough," 9G2 approved.

The professor found himself in a dangerous predicament. He had easily avoided 4N7 up until now. 4N7 was

in the next minaret. Soon, they must meet, especially, he believed, if 4N7 learned of his presence there. A short conversation would soon convince the Mume of the professor's real identity, or at least he would be suspected. The professor forgot his troubles momentarily to pick up the thread of the scientist's discourse.

"—and the fleet of Zor will find itself hemmed in by this great, globular ray thrown completely around it. Then we shall start compressing the inner confines. There will be no escape for them. To dive into the walls of the enveloping ray will only mean quicker annihilation. To remain passive will mean the same final result when the ray closes up into a small sphere. There is no nullifier yet invented for this ray. It is one which 6D4 has smartly reserved for this particular purpose. With the exception of several convincing tests, it has never before been used."

"But how are we to maneuver the entire fleet of Zor to this locality?"

"Not the entire fleet, but nearly all of it," amended 9G2. "Our ships are going out to meet the fleet of Zor which is approaching in full force. A terrific battle will be started; then will follow the gradual retreat of our forces. The Zoromes will naturally follow up the 'advantage,' being much stronger than our fleet. When they are lured to this locality, we shall send out our enveloping ray."

Professor Jameson stood aghast at the frightful fate which lay in store for the Zoromes.

"ALREADY," said the Mume scientist, "our fleet is going out to meet the ships of Zor which our scout fliers have reported are on the way here from Zor."

9G2 took the professor through the interior of the minaret to explain the

various features of its mechanism. The professor gazed upon a labyrinth of machinery, dials, television squares and intricate apparatus.

"Underneath these four columns is stored the power necessary for the operation of the enveloping ray."

"What is this large communicator for?" the professor asked, waving a tentacle towards a communicator of greater power than the ones attuned to various districts of the subterranean city.

"It is one of our special duties here in this station to keep our ships posted concerning operations. We want to be certain they are outside the field of destruction when we cut loose with the ray. Then, too, they must know when and where to maneuver the enemy fleet to the best advantage.

"Are we attuned to a single wavelength?"

"No. The communicator is adjustable. Our ships are all on the same wavelength, however, so there will be no trouble or unnecessary repetitions."

In this manner, Professor Jameson learned of the plot to destroy the great fleet of Zorome space-ships bent on breaking the belligerent menace of the Mumes. Under the tutelage of 9G2, he acquired within a few days the complete knowledge necessary for him to take orders from the central control room beneath the cylinder and execute them satisfactorily. 9G2 warmly commended on his aptability.

During the time in which the fleet of Mumed was engaged in drawing the full force of Zorome ships into the field of the enveloping rays influence, Professor Jameson waited, with the patience of a fatalist, for the coming of 4N7 across the narrow bridge joining their minarets. Then he would be revealed as an imposter, a spying Zorome. But, strangely, 4N7 did not come. 9G2 went over there for various reasons several

times while the professor apparently concentrated his attentions upon some problem or duty in the minaret. And from the minaret to their left, 7X5 came over occasionally to talk over the impending operation of the enveloping ray. Those chosen for the guidance and operation of the enveloping ray were kept posted concerning the swift succession of events occurring in space in and around the planetary system of the Mumes.

The Mumes had gathered their fighting ships and were heading to meet the cautious, approaching fleet of Zor, strung out across several million miles of space. The concentration of Mume space-power had sent all ships of Zor, lurking in the vicinity, scurrying discreetly from Mumed to less exposed positions, some of them hurrying to meet the gigantic fleet from Zor and spread the news. Behind these scout cruisers of Zor which fled from Mumed to meet their fleet came the full power of the Mume space ships, slowly yet purposeful.

What 6D4 had anticipated and counted upon actually occurred.

The Mumes engaged the fleet of Zor from a tantalizing distance. Immediately, the Zoromes slowed their pace as the ships from behind came up to gather in closer formation and start a flanking movement upon the Mumes. Zor was concentrating the full strength of its cosmic power to meet and destroy the space guard of Mumed. After a bit of skirmishing with the advance battle formation in which few ships on either side were lost, largely on account of the Mume locator veils, the Mumes backed off in a slow, firing retreat.

The ships of Zor fell into pursuit, determined to overtake and destroy the enemy or else trace it to its stronghold on Bexn and bombard the defense.

"They're nearly here!" cried 9G2 in high glee. "See!" He rushed to the detector fields and pointed to a myriad

of dots on the screen, all merging and partly obscuring each other. "Our ships! The enemy is not yet visible!"

APPREHENSION struck the professor. Soon, the Zorome space fleet would be no more. A powerful, grinding noise vibrated throughout the minaret. Through a small, transparent facing of the tower, Professor Jameson saw quivers of blue light sent shimmering above the massive cylinder. The Mumes were getting ready to enclose their enemies in a projected sphere of death. The professor ran out upon the bridge. Down in the city, excited crowds surged and milled, both machine men and organic Mumes, the latter's squat, many-legged bodies contrasting strangely with the glistening metal physiques of the machine men who predominated in numbers. All were awaiting eagerly the tragic drama to be enacted—the wholesale destruction of Zor's entire space fleet. The remaining stragglers outside the nucleus of the invading fleet would be dealt with afterward, when the enveloping ray had finished its grim, efficient work.

9G2 called to his assistant.

"You seem nervous, 9Y1. Calm yourself. We have much to do. Nothing will go wrong. We have only to follow orders."

The professor took a fresh grip on himself. He was relaxing his mental vigilance, and that would never do. He felt thankful that 9G2 was not of a suspicious nature. For a moment the seriousness of the situation out in space beyond the ray-blanketed world of Mumed had made him forget the peril of his own position with its accompanying necessity of inner thought repression.

He took his seat by the giant communicator. Over the small instrument above his head came general orders for the fleet. He relayed them. Those in

the secret city listened. All were able to hear the messages sent out into the cosmos to the ships of Mumed. 9G2 watched the chart anxiously.

"It won't be long before the enemy will be in line for the ray. The ray can only be projected a half million miles into space."

A deadening sensation seized the professor. Under his immediate attention, ruination was about to fall passionless upon his adopted world. Zor was about to be blighted by a terrific death blow at its citadel of defense, the immense space fleet. Mechanically, he sent out the messages, a bit slowly, inwardly reluctant to spur the deadly events which were about to spell doom to several hundred thousand of his fellow machine men and their organic brethren.

"9Y1, are you feeling fit?" asked 9G2 suddenly. "Are you fully recovered from the shock of that space wreck on Tanid?"

"I am well, I believe."

"You seem a trifle slow, uncertain. It is unlike you."

"I am sorry," the professor replied. "I shall try and speed up."

"Do so. The central operators seem a bit impatient."

The rumbling in the massive cylinder grew to a high pitched drone.

"There goes the ray!" the old scientist exclaimed.

Professor Jameson watched the enveloping ray from his instrument board. It commenced leaving the planet in a flat oval, followed by a long stem of the ray, the ray defense of the planet opening for its egress and then closing again about the stem. The oval grew cup-shaped, and the sides of the cup became elongated. Rapidly, the cup rushed out into space with terrific, starting momentum, its gigantic maw measuring many times the planet's diameter.

Straight for the space fleet of Zor it rushed, appearing like a subdued star of dwindling brilliance, its latitude becoming still greater as it left the planet farther behind, connected with the secret city only by a comparatively thin wisp of bright material along which the Mumes governed its actions.

When the cup's lips reached the outermost location of the fleet, it closed up. The fleet lay imprisoned in a destructive sphere. Several ships coming in contact with its inner wall were instantly destroyed. The Mumes now held the enemy fleet at their mercy. And 6D4 knew no mercy which did not lead directly to greater conquest.

Professor Jameson desperately contemplated the mechanism about him. Would its destruction break the power of the enveloping ray? He doubted it, for 9G2 had informed him that this minaret held but one-quarter of the power necessary to supply the cylinder. All he could hope for, if he could obtain the chance of wrecking the machinery, was a possible, temporary respite from contradiction of the enveloping ray. The space fleet of Zor would still be helplessly bottled up waiting destructive measures of the Mumes.

CHAPTER IV

WHILE these thoughts ran rampant through his mind, the professor was interrupted by a call from general headquarters. The enveloping ray had commenced its insidious contraction, much like a leaking balloon. Eventually, the ships of Zor would be huddled together and destroyed as the ray closed in upon them from all sides. The call came under the authority of 6D4 and bade operations to be suspended momentarily. The globular ray suspended its shrinking process.

There came a brief pause until the

reason for 6D4's sudden change of plan became apparent. The reason came in the form of a message from the central control to the minaret of 9G2 and the professor.

"We have opened your giant communicator to the power necessary for communication with the Zorome space fleet. 4N7 is holding open a break in the stem of the enveloping ray to enable you to send the following message:

"You are surrounded by a wall of death. There is no escape. Even now, the walls are closing in upon your ships. I am giving you but one chance. Take it, and it means life instead of death. Turn your space ships over to me and enter my service. You are given only a short time in which to reach a decision. 6D4."

"Send out the message!" cried 9G3, waving his tentacles excitedly.

The entire city listened for the message to be repeated in larger power to the condemned Zoromes. Professor Jameson hesitated a moment. The fate of worlds hung in the balance, yet he was apparently powerless. Dangerous thoughts whirled about in his mind. He was appalled by the significance of the grim situation. Conflicting thought emotions strove for expression.

"6D4 wants those ships and the metal bodies," 9G2 enthused. "He'll let the ships out a few at a time. Our ships will stand by to take them over. Enter our service! Not Zoromes!"

The professor scarcely heard what the old scientist had said. 9G2 received a brief glimpse of the professor's tremendous mental unrest which momentarily burst the machine man's strained vigilance.

"Here—let me send it!" the old scientist snapped. "This is no job for you! You're unstrung!"

"No! I am quite all right!"

The rapid manner in which Professor

Jameson gathered his composure impressed his superior. With tentacles at the controls, he found the wavelength of the Zoromes and received a verification from them. Then he notified them of the sending identity.

"That's quite unnecessary!" 9G2 fidgeted. "Give them the message of 6D4 and have done!"

"They seem to verify their position a bit raggedly," the professor lied. "Do you suppose we shall be able to receive a clear reply?"

"Certainly! 4N7 is maintaining a small clearance through the stem of the enveloping ray for the return message! But hurry! He will close it when the stipulated time is up!"

Professor Jameson sent the message out slowly.

"You are surrounded by a wall of death. There is no escape. Even now, the walls are closing in upon your ships. —This is 21MM392—captive in the subterranean city directly below you! Flash back annihilator rays along your ultra-reverse detector beams before the gap closes!

—21MM392."

THIS electrifying announcement left its listeners paralyzed with astonishment. For several seconds, 6D4, 9G2, the Mumes, Zoromes, and everyone listening, were dumbfounded. In this brief pause, Professor Jameson acted. Lifting a massive bar of metal, he smashed the power controls and other intricate mechanism which supplied the minaret's power to the central supply beneath the cylindrical superstructure.

9G2, recovering from his surprise, rushed at the professor who had made himself known so suddenly in this hot-bed of enemies. Professor Jameson struck up the tentacle of his assailant who flourished a metal-eater, lunging against him, grappling for supremacy.

He longed for the heat ray he generally carried in his fore tentacle, but it had been lost to him during the crash on Tanid. He possessed new tentacles which had been made on Mumed. The professor received several shocks on his metal body from the pistol of 9G2 as he setn the Mumed scientist rolling out the door upon the bridge.

A third machine man came running across the bridge from the next minaret. It was 4N7. Now, the professor knew that he had two enemies to combat, metal enemies equally as formidable as himself. But what difference did it make? Soon, he would have the whole city down upon his head in the ruin he had invoked from the fleet of Zor. He was already doomed and knew it, fighting to live just long enough to hear a terrific roar and watch the buildings of the enveloping ray crumble into ruin.

9G2 arose to his feet. Seizing his metal cubed body, Professor Jameson pitched the Mume into the dizzy depth of the far off street. He turned to engage 4N7. The surprise of his life awaited him.

"21MM392!"

"6W-438!" the professor exclaimed. "Where did you come from. I thought you died in the crash of Tanid!"

"I am 4N7—to the Mumes! I suppose you are 9Y1! Run this way! Our only chance!"

Professor Jameson was too dazed by the discovery of his metal comrade to think clearly by himself. He followed the running feet of 6W-438. Straight through the next minaret they ran. Beyond was a small platform, and upon the platform stood the small space flier the professor had noticed the day he came.

"Get in!" motioned 6W-438. "We have no time to lose! I hear your—"

A deafening roar split the air. The minaret behind them trembled. Professor Jameson leaped into the space flier,

6W-438 behind him. The central building with its towering cylinder had burst to pieces. Behind them, the minaret they had just quitted crumbled and fell like a shattered smokestack upon the city below. The bridge on which the flier stood gave way, and they hurtled downward into a veil of obscuring dust. The automatic gravity brakes reduced their drop.

"We must get out of this and head for the city tunnel!" cried 6W-438, guiding the flier back into the cavern dome. "Our fleet will destroy the city!"

As they rose, a roaring column of loose building structure hurtled about them. Another minaret had gone down. They staggered out of the raining debris. The city was a chaos. The enemy had suddenly turned the tables and had reversed the offense. No one thought to stop them or bring down the little space flier heading for the tunnel. In fact, no one knew but what it was carrying Mume officials, for it was a city craft.

Unhampered, the professor and 6W-438 raced up the tunnel and out upon the surface of Mumed. Through the breach left in the ray barrier by the destruction of the enveloping ray there poured space ships of Zor. Knowing what was soon to come, the two Zoromes sped low over the ground in the Mume space flier to put a safe distance between themselves and the secret city which the Zoromes were already bombarding. With the explosion of the great cylinder in the subterranean city had gone the enveloping ray. The fleet of Zor was once more free and all powerful.

"LOOK!" 6W-438 drew the professor's attention to an object pursuing them. "Another space flier!"

"From the subterranean city, too, judging from the direction of its flight."

"It is a Mume flier, like ours! We

must put on greater speed to elude it!"

6W-438 made the little space flier turn suddenly to one side in a curve that he finally developed into a right angle turn. He watched the flier behind them. To the perplexity of the machine men, it kept on its original course and made no effort to follow them.

"That flier is not after us!" the professor exclaimed. "Someone else is escaping!"

"Who can it be?"

"I have my suspicions! We must follow!"

The two machine men took it for granted that the other flier, like the one they piloted, was devoid of armaments, and they boldly clung within striking distance. The two space fliers kept on through the atmosphere, 6W-438 hanging doggedly to the trail of the other craft. They passed by aircraft of Mumed at terrific speeds, the air currents roaring and sobbing past the streamlined pellets. No space ships were seen. Most of the Mume space craft was outside and at grips with the ships of Zor.

Behind them, the two Zoromes knew that soon there would be individual combats all over the planet, Mume aircraft against Zorome space ships. Professor Jameson fully believed that the termination of the space war was close at hand.

They were approaching one of the ray locks above a Mume city when a startling announcement from the space flier ahead to the city officials confirmed Professor Jameson's growing suspicions.

"Open the ray-lock at once! This is 6D4! I go to join my fleet!"

"Take after him!" the professor directed 6W-438. "Don't let him get away!"

"Zorome space ships are coming far in our rear!" observed 6W-438. "They will fire on both space fliers when they come closer!"

"We should be through the ray-lock by then! They will have it closed behind us by the time our space ships reach here!"

6W-438 shot the space flier ahead so swiftly that the air fairly screamed past, the flier wavering from side to side sickeningly. The little ship ahead of them dashed up the cylindrical passage walled in by palpitating rays.

"If we ever hit the rays with this ship, it will mean farewell," warned 6W-438 as he slowed their mad speed to approach the opening above the atmosphere. "These Mume ships do not bounce off the barrier rays like our ships."

The little flier of 6D4 gave a leap of tremendous speed as it hurtled from the egress of the tunnel into unrestricted space. The flier was so small, and the distance gained so sudden, that 6W-438 almost lost trace of the other craft on his detector board. But a frantic burst of speed away from the planet put its location back upon the detectors once more, and now 6W-438 gained an idea of 6D4's course and clung to that direction.

"Where do you think he is going?"

"Not to join the fleet. He is going the wrong way."

"Behind us, his plans of empire are dying," was 6W-438's suggestive statement.

THROUGH space the two fliers raced. Several times they passed the vicinity of Zorome ships, and both were subjected to fire. Charges of destruction and flaring rays slashed dangerously close, but the swift little ships were elusive targets and their diminutive bulk soon passed beyond range of the detectors. Once, they passed a group of speeding Mume ships, but 6D4 failed to slack his space an iota, nor did he reply to the queries hurled at the two

space fliers as they rushed past and off the detector boards in a rapid burst of motion.

"6W-438, there is still another besides us two who survived the crash on Tanid," the professor stated. "Do you think that he, too, may be a Zorome?"

"I wonder. When I learned about you, I believed you to be a Mume and avoided you, fearing detection."

"Just as I avoided you for the same reason," added the professor.

"The Mumes believed me one of them without question."

"An organic Zorome survived that crash, too, and was killed by the Mumes," Professor Jameson mentioned. "And perhaps a few of the Mumes survived, but if they did they never lived to know about it."

"What do you mean?" queried 6W-438.

"From what I was told, the solution is obvious," said the professor. "At first, it failed to make sense, but now I know. The organic Zorome who survived saw the ships of the Mumes coming and realized but one thing. He knew our chances, if we survived, were better than his. He made sure that all the Mumes were dead before the investigators came."

"It sounds reasonable."

"What makes it more plausible is the strange fact that when the Mumes entered the wreck they saw this Zorome about to finish me with a ray gun."

"It was a ruse," offered 6W-438.

"Exactly."

"Then we owe our lives to this organic Zorome. Who was he?"

"It is probable we shall never know. It was one of the four we had on board our ships."

The little space flier hung close to the path of the fleeing Mume. The two Zoromes knew that 6D4 must be aware of their presence, yet strange as it

seemed he made no effort at communication. Did he wish to keep his identity a secret, or did he know them as enemies? It puzzled the professor that 6D4 did not try and throw them off the track by tricky maneuvers. The leader of the Mumes kept onward in a straight, unswerving line.

"He's heading for Ablen!" ventured 6W-438. "Ablen lies straight ahead!"

6W-438 had the strength of his assertions borne out as the flier of 6D4 headed direct for the looming planet of Ablen which lay two worlds farther from the sun than Mumed. Ablen shone like a quarter moon against a velvet shroud of darkness, beyond it was a shroud punctuated profusely with brilliant star clusters.

6D4 made a half turn to the planet and landed on the morning quarter of the world. The two Zoromes swiftly followed his ship, not losing him for one moment. As 6D4's flier sank into Ablen's atmosphere, the two machine men of Zor made up part of the distance between themselves and their enemy, the distance 6D4 had put between the two ships when he had shot clear of the ray-lock on Mumed.

INTO a deep valley, the space flier of 6D4 gradually decelerated, coming to rest in the shelter of overhanging vegetation which climbed the steep sides of the valley's wall. Eyes, other than those of the two machine men swiftly descending in their pursuing craft, also saw the space flier of 6D4 bump and skid to a stop on the valley floor. From above, sight was lost of the little space flier which lay screened by the verdant foliage, and 6W-438 dropped the flier a short distance from the spot where 6D4 had landed.

The two machine men left their craft and hurried to where they had seen the ship of 6D4 drop through the trees.

They found the little space ship at the termination of a long furrow it had ploughed in the ground. It lay on one side, and the door was partly open.

6W-438 approached the overturned craft a bit cautiously, the professor covering the entrance of the ship with his metal-eater held poised for 6D4's appearance. 6W-438 looked inside.

"It is empty!"

Professor Jameson stepped forth from his concealment in sudden alarm. Rough, pitted spots were appearing and growing rapidly on 6W-438's cubed body just below his head. The professor radiated a mental alarm and discharged a sustained fire in the direction of an agitated clump of bushes fully two hundred feet distant from the flier.

"This way!" the professor exclaimed, heading for the spot where a faint movement had recently stirred the bushes. "If our metal heads were not those of Zorome composition, you would have been dead by now! It was a smart move on the part of 6D4!"

"Our Mume bodies and appendages are vulnerable to his pistol, and he can disable us quite easily if he is given an advantage. We must use caution."

A fitting, metal figure disappeared behind a pile of large rocks just as Professor Jameson peered through the bushes. Risking all in one dash to be the first to fire, possessing full knowledge that his own head would resist the powers of 6D4's weapon, the professor ran and gave a leap over the nearest boulder where he had last seen 6D4. A hurried examination among the rocks disclosed the fact that the fleeing Mume had taken no stand here but had hurried onward. 6W-438 joined the professor, and together they continued at a fast pace along the valley floor.

The valley was narrow, and they knew that 6D4 could not slide past them and regain his ship or theirs. Their stop

at the boulder heap had given him a good start, and they saw nothing of him, only occasionally there were his tracks on softer portions of the ground. The valley grew narrower and steeper after several miles of running, the vegetation disappearing to be replaced by rough, rocky walls.

"There he is!" exclaimed 6W-438, pointing ahead and upward.

The professor looked to where his comrade designated with waving tentacle. Fully two hundred feet above them, 6D4 was climbing rapidly, pushing with his four metal legs against the rough crags, while with his tentacles he pulled, seized and hauled himself upward.

The two Zoromes levelled their pistols at the self-styled emperor who had fled from the ruin which was falling upon Mumed as a result of the one flaw in his colossal plan to destroy the fleet of Zor. 6D4 had evidently seen them, for he scurried along a ledge halfway up the side of the valley wall and disappeared behind a rocky escarpment.

But he soon reappeared and unloosed a flood of metallic disintegration upon them. Professor Jameson felt one of his tentacles drop from him and fall clattering among the small stones as he and 6W-438 ran for shelter around the jutting formation of rock. Knowledge that their heads were invulnerable to the potency of the metal-eaters caused the two Zoromes to keep their eyes on the position of 6D4, ready to fire the moment he left the protection of the ledge. In this manner, several ineffectual returns of hostility developed. 6D4 held the best position, but already his metal head was badly scarred from the sniping powers of the two Zoromes.

Concealed, with the exception of his metal head and one tentacle, the professor suddenly experienced the surprise of having the tentacle melted away

beneath his weapon which fell clattering and rolling to the center of the valley floor. In dismay, Professor Jameson saw it slowly eaten away by the opportune aim of 6D4. But 6W-438 was not idle, and far above them 6D4 hastily grabbed at his metal-eater with another tentacle. The one, with which he had been holding the weapon, 6W-438 had melted in two.

Far above 6D4, on the rim of the valley, indistinct figures flitted into sight then back again out of view.

"What are they?" the professor queried, ducking back from a renewed effort on the part of 6D4 to annihilate them.

"Ablenox, I believe," was 6W-438's venture. "I saw them none too plainly, but they were not machine men. Of that, I am positive."

"There they are!" the professor announced. "They're doing something up there!"

Far above them, several hulking brutes were pushing and tugging on a large object which was not yet in sight. Their low, sloping foreheads denoted a minimum of intelligence. Four mighty muscled arms on each of the creatures bulged and strained as a large rock was rolled into view.

"They're going to roll that down on 6D4!" cried 6W-438 in rapid understanding. "The Mumes oppress and enslave them! The Ablenox see a chance for retribution!"

In the minds of the dull-witted creatures above, the two Zoromes distinguished an inherited hatred against the machine men who were the bane and cruel ogres of their existence. Now, they saw a chance to kill.

The combined strength of the Ablenox brought the massive boulder to the edge of the valley's rim where they poised it on end to be sent hurtling down upon 6D4 who lay on the ledge below them.

The two Zoromes peered from their positions and made no effort to acquaint the doomed tyrant with his impending danger. Unwitting of the menace above him, 6D4 still fired viciously at the two metal heads peering out from a rocky jutt near the valley floor.

"The Ablenox deserve to exercise vengeance more than we do," was the professor's consensus.

THE two Zoromes waited. With a united effort, the Ablenox sent the great rock juggernauting into the valley. It struck an outcropping of rock which it pulverized to powder, bouncing angrily towards the ledge where 6D4 lay secreted. The concussion aroused 6D4. In terror, the Mume looked up just in time to see the oncoming boulder rush down through the air. It was the final, split-second realization in the artificially prolonged life of a cruel, empire dreamer. Both ledge and 6D4 were crushed and broken to be sent sliding into the valley, small bits of metal parts mingled with a roaring conglomeration of onrushing rock.

"Run!" cried the professor. "They've started an avalanche this way!"

The two machine men raced down the valley away from the sliding, rolling tons of rock debris which thundered upon their recent position. Their metal bodies were hit with flying stones and ground particles of rock, but their retreat was a safe one.

"That was close!" stated 6W-438 as they ceased running to look back at the mass of rock which choked the valley. "We cannot go back the way we came!" "Let's climb out."

The two machine men started a careful ascent of the rugged wall. 6W-438 looked up.

"The Ablenox! They're getting another stone ready!"

Quickly, the machine men dropped

their holds and tumbled to the valley floor where they ran to escape the crushing doom shoved off the valley rim far above.

"They believe us to be Mumes!" was the professor's dismayed discovery. "We must let them know that we mean them no harm!"

In vain the machine men concentrated their mental faculties upon the Ablenox who followed them along the valley's rim, watching them from above, waiting for the two Zoromes to start climbing. The Ablenox knew nothing of Zoromes or Mumes. They only knew that all machine men were cruel oppressors of their race. They never lost an opportunity to kill a machine man. Such opportunities were rare. All promises were met with stubborn threats. The two Zoromes recognized the futility of argument.

At the professor's suggestion, they ran at their swiftest pace along the valley floor, the Ablenox keeping pace with them on each side of the valley. But the strain eventually told on flesh and blood just as the professor had expected. The machine men rapidly outdistanced the Ablenox, and when they believed they had put a safe distance between themselves and the menacing creatures they hurriedly scaled one of the valley walls. They were none too soon, for the grim, determined Ablenox hurried up all out of breath and commenced hurling rocks at them just before they reached the rim of the valley. The rocks they threw were small ones, the Ablenox having no time to roll up a boulder, and these were either dodged or else they clattered harmlessly from the bodies of the machine men.

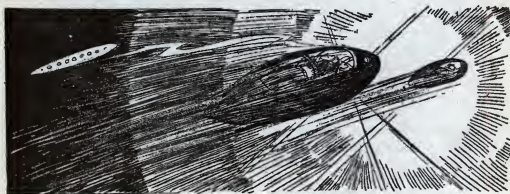
The situation became reversed, however, as the machine men climbed out of the valley. The Ablenox turned tail and beat a hasty retreat, the two Zoromes making no attempts to follow.

Coming back to the tree-verdured vicinity where they had left the space fliers, they found to their disappointment that both ships had been completely wrecked and stripped of everything movable. The Ablenox had seen to that,

"We have been in worse spots than this," the professor reminded his companion. "We have only to wait until a ship comes to Ablen and finds us."

"It may be a Mume ship."

"I have an idea that soon there will



The two fliers racing through space.

What they were unable to steal, they had wrecked and destroyed in an orgy of vandalism.

"We're marooned on Ablen," was 6W-438's simple, yet illuminating statement.

be a complete scarcity of Mume ships."

"Then you believe that we will win, or have won, the space war?"

Professor Jameson countered with a query of his own.

"What do you think?"

THE END

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Liners of Time

By JOHN RUSSELL FEARN

We are sure our readers do not like Jelfel's personality, but our author in this concluding portion brings his story to a satisfactory ending in spite of this disagreeable character.

PART III

CHAPTER XII

The Devil's Workshops

I NEED not explain at length the journey to the Machine Department. It was reached by a devious system of stairways and winding passages, all flooded with the glare of arc lights. Jelfel kept constantly in the forefront, walking at a steady pace, and behind was the guard, with leveled ray gun.

Then presently we emerged, from the silences that grouped about Jelfel's domain, into a region of steadily increasing sound and warmth. Sickly warmth that clung to the shining iralium walls, warmth that literally stunk with chemicals, and had within it all the qualities of the revolting and obnoxious . . . The noise increased steadily, merging from the steady, deeply pulsating thuds of distance into more clearly defined hammerings and roarings, that brought before my mentality visions of immense pile-drivers and electric saws of colossal dimensions.

The nature of our surroundings changed. The passages became bleaker in aspect and less luxurious. The iralium walls seemed to shine inimically, and had lost their former cleanness and brightness. For some obscure reason I was reminded of a visit I had once

made from the dirty working quarters of New York to the sea-coast. The change in appearance here, reversed in order, was very analogous.

At last Jelfel passed before a grilled gate, possessing bars of three-inch thickness. Beyond, Elna and I had a vision of a repellent, uninviting enclosed square, lined on either side by doors, from behind which emanated this constant and almost distracting din.

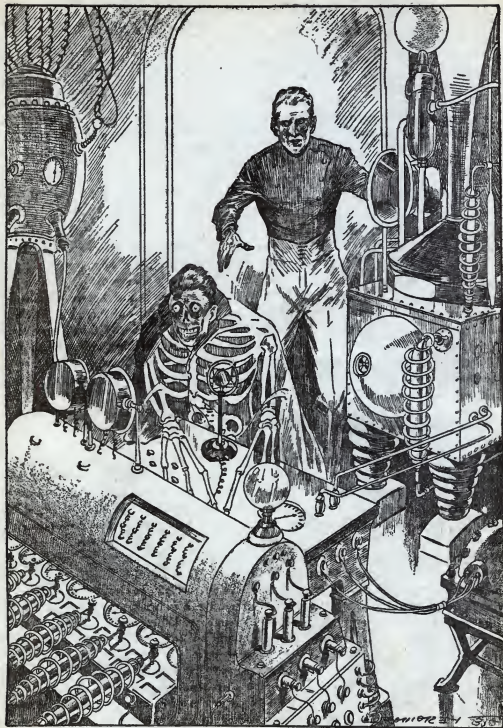
"I am afraid you will find your future abode a trifle noisy," Jelfel said drily, turning. "However, it is a fact that the ear-drum can become attuned in time to almost any vibration periodically. You will have ample time and scope for proving the authenticity of that statement."

"Don't you think you've done enough torturing without adding more?" I asked him bitterly. "If ever I get my hands on you again, Jelfel—"

"You won't!" he assured me coldly, fingering his throat tenderly. "I have an intense dislike of having my throat interfered with." He stopped at that and looked back into the square as an armed guard approached, moved the switch that operated the electric lock on the prison gate, and we saw the entire thing move slowly to one side.

"It took you long enough!" Jelfel snapped, glaring at the guard.

"My regrets, Master," the sentry/an-



My gaze penetrated clean through Jelfe's black clothing and I beheld his skeleton form. . . . But it was not the form of a human being as we know it!

swered humbly; and I felt within me a sickening disgust at the fawning manner of this sycophant. No wonder, if all the slaves of the Age of Problems were like this, that Jelfel was the undisputed ruler and dictator.

We were then conducted across the square to one of the many doors. Once again came the operation of the electric locks, then we were inside the place, on the threshold of the workshops of this machine-crazy Age.

I will not say my brain reeled at what I saw, for in my clearer state of mentality I comprehended much of what lay before me; but I do say that, had I seen it a few weeks previously, I should have stood before it all like a child. The infinite complexity of it all! The labyrinth of astounding and unexpected things!

And the heat—and the light! The heat struck me like a physical blow, a mighty upper-surge of super-charged warmth, having with it the obnoxious odor of molten alloy and strange chemicals. It blanketed Elna and me instantly, setting us gasping for breath for a moment. High up in the lofty ceiling were arc lights of terrific power that drenched the seething flow of activity and metal beneath. Everywhere was metal, and strange, unaccountable instruments. Dials that glittered strangely on the metal walls, flickering lights that leapt perpetually across blank emptinesses, men that moved in orderly formation upon towering platforms of metal, with tortuous staircases rising upwards to the lofty metal roof. Here and there an electric welder flared into blinding life, and I caught a vision of a crouching figure in gray overalls with a shield of purple glass before his eyes . . .

And din! It deafened conception, it robbed me of the ability to even think for a space. Roaring, beating, ham-

mering—a modern Babel!

"Interesting, is it not, Commander?" asked Jelfel's voice, close to my ear.

I spun round on him, so suddenly that he took a step back.

"Don't worry; I can't do anything to you!" I shouted harshly, speaking with all my power to make myself heard. "But, by heaven, Jelfel, you're going to pay an account to me one of these days—not only as retribution for these poor devils here, but for the murders you have committed, and for the supposed fate to which you have condemned Elna and me."

"Did you say 'supposed'?" he asked, with that sardonic grin of his.

"I know you'll never succeed," I answered grimly, and I dare say it sounded at that time a very absurd remark; yet I felt I had grounds for uttering it.

Jelfel shrugged indifferently and turned back to the scene before us. Presently he raised his hand and motioned to a distant guard. He came up the long flight of steps from the hall floor at a run, and saluted.

"You will take these two and set them to work with the others," Jelfel ordered. "You will treat them exactly as the others. The only exception is that they must be watched more closely."

"Master, it shall be done."

Jelfel turned back to Elna and me once again. "I am afraid that this is where we must part—at least for the time being," he said, with a plainly mock bow to us both. "Maybe we'll see each other at some future date—if you live that long," he added thoughtfully; then he turned to the door behind us and was gone.

I looked back again at the guard. He was a brutal looking fellow at the best, with a close-cropped head, bull neck, and repugnant features. Dressed only in a sleeveless vest and trousers, he

revealed all the immense muscular power of his arms and chest. Obviously, from this physical development, and yet narrow, hair-bestrewn brow, he was composed of more brawn than brain. In his hand he carried a vicious looking affair that was an improvement on the old-time cat-o'-nine-tails. Six tendrils of knife-edged metal strips swung from a thick butt, which he clutched in one powerful, hairy fist.

"Come!" he spat out at last, jerking his thumb over his shoulder.

I glanced behind me; the guard who had been with Jelfel had also disappeared. With an inward feeling of resignation I took Elna's arm and together we slowly descended the twenty broad steps to the floor of this devil's workshop.

As we passed down the central aisle, the guard a trifle in front of us, I caught glimpses of worn and emaciated faces peering at us, with a dull inquisitiveness, over the various machines. Lack-lustre eyes that gazed, with a mingled feeling of sympathy and curiosity, across whirling, nerve-distracting gears; men with lantern jaws and cold eyes that watched, with almost pitiable intensity, the movements of incomprehensible dials and quivering, delicately balanced needles.

To gaze upon the Age of Problems from the outside it would have been difficult to have thought that so much misery and suffering could have been contained within its core.

"I wonder if I shall ever look like these poor women?" Elna muttered in my ear, her gray eyes looking at them in mingled horror and sympathy.

I looked down at her youthful, athletic form and the strong set of the shoulders.

"NEVER!" I vowed, with the deepest emphasis. "I'll blow the whole stinking outfit to Hades before you shall ever look like that. You, with all your

health and youth, transformed into a hag . . . By Heaven, *no!*"

"You seem—" Elna began, but she left her sentence unfinished. The guard had stopped and was looking at us malevolently. Unconsciously we had ceased to follow him in our interest in things about us, but it was obvious from his expression that he intended to quickly rectify the omission.

"What do you think this is? A tour?" he asked sourly, hands on hips, surveying us with his lower lip protruding.

I did not answer that. "I'm being lenient with you," he went on, spitting with startling force on the metal floor, "but that's only because you're new here. See? Any monkey tricks, once you're settled down, and may the Gods protect you!" He slapped his whip in an anticipatory fashion, spat again with eye-opening vigor, and blew out a deep breath of bestial emphasis.

"You're threatening us, you mean?" I asked him in a grim voice.

His beady eyes, shot from me to Elna, then back to me again. He tightened the belt about his middle with one hairy paw. "Just warnin' you," he said. "Come on!" Once again that dirty thumb jerked to regions unknown, and we followed him to the end of the aisle. At this point we stopped.

"Now," he said, "there's plenty of room for you two on that time liner we're building over there. You'll have to change first. Follow me."

We obeyed, and at the entrance to another aisle, that led into gloomy regions unknown, we paused again. An iron-faced woman in forbidding costume came out of the gloom.

"Woman here for overalls," the guard said curtly. "I'll take charge of the man."

I tried to say a word to Elna, but it was useless. The woman seized her by the arm in a grip of steel, and half

dragged her into the gloom and darkness. I, for my part, shook loose my guard's grip as he endeavored to do the same.

"I shan't run away," I said coldly. "Carry on, and get on with it!"

He sniffed unpleasantly and led the way through devious routes to a small, dimly lighted place lined with shelves of overalls. Taking a swift measurement of my form, he searched amongst them until presently he hurled one at me.

"You won't want those clothes you've got on," he said with a grim smile. "Take 'em off and put these on. You're a worker now . . ." And he leered into my face in such a repulsive manner, that I felt very much tempted to smash my fist into it.

The change occupied about ten minutes, and I did not feel particularly comfortable in my new outfit. The cloth was rough and coarse, more like sacking than anything else, and of a drab gray shade. It completely enveloped the form from ankles to neck. Upon my head I perched a small, circular cap.

"That's your number," my guard said cynically, and pointed to the figures 42789 sewn in white upon my chest; then as I looked down at them with a twisted smile he spoke again. "Time to get movin'. Come on."

We returned to the doorway of the Machine Department again, and found Elna and the iron-faced woman already there. I could have wept at the vision of Elna in that awful sacking stuff, completely covered by the coarse material, with only her bright face and quick hands protruding.

"Now—work!" the guard said, before we had a chance to speak, and we were piloted along various aisles until presently we reached what was presumably a half-completed time liner—a massive, cigar-shaped affair reposing in an iridium

cradle and extending for quite five hundred feet down the immense hall.

At length we joined a party of similarly-garbed workers, busy upon the construction of this monster of Time. Men and women were everywhere, riveting, sawing, chiseling and hammering. Near by, a machine that emanated pure heat by a system of rays through narrow lenses, was melting solid metal into liquid. The heat of this brutal apparatus nearly turned me sick for a moment, then I fought against it and conquered.

"You need know nothing of what you are doing," the guard said. "That man there—Karis—will tell you what to do. Do it, and ask no questions." With that he turned away about his normal business and Elna and I approached the short, bloated individual standing in the center of the activity, watching the proceedings, and referring eye and again to a blueprint and chart. He turned as I tapped him on the shoulder and revealed a purply-red, beefy face and protruding, curiously brilliant blue eyes.

"Well?" he barked out, with such impatience that even I was startled. "What is it?"

"We are here for work," I said coldly, motioning to Elna.

"Well!" He put his arms akimbo and surveyed us from head to foot with a contemptuous grin. "Isn't that nice!" He made a note on a greasy looking piece of paper. "Numbers 42789 and 66798. All right"—he looked up—"get busy with those workers over there. And when I say busy, I mean *busy*!"

We obeyed without a word, and in a moment were among the dull-eyed individuals, assisting them to erect a square contrivance of metal against the enormous side of the time liner.

Our struggles had commenced in real earnest at last.

CHAPTER XIII

A Remarkable Discovery

NOW that the preliminaries connected with our initiation into the hellishness of Jelfel's workshops was over, I began to exert my mentality as I worked on steadily, deliberately doing nothing to incur the wrath of the brutal Kariso. I had no desire to court disaster at the moment, or even move from this particular work I was engaged upon . . .

And the reason for this was because I was commencing to notice many peculiar things. I doubt if in my former mental state I should have detected anything unusual, but, now my brain was once again on the upward movement, and improved beyond all former efforts, I began to apprehend certain things, Elna, I think, noticed as well.

We were not at work upon a time liner at all!

I was sufficiently acquainted with the construction and interior workings of a time liner to know almost to an inch what would be required to make it up—and yet this five-hundred-foot monstrosity had none of these things! For one thing, the metal was not that which would float in the Correnium gas, and for another the all-important lead sheathings were missing! What the metal was I could not quite make out.

The assembling of the various parts was anything but in keeping with a time liner. The control room was being placed at the center of the thing, and the other rooms at the two ends. And again, there were only six rooms in all. If this was the full accommodation of the thing, how on earth did Jelfel expect to move all his surplus population? Again I felt that growing conviction that he had been lying.

Elna was engaged mostly in assisting three other women to raise the metal

sheets up to roughly constructed platforms, where the plates were welded into position by electricity. For my own part I was busily engaged on helping in the construction of the control board—just the work I needed if I was to solve the problem that confronted me. I thanked my lucky stars that I had the super-keen intelligence to comprehend not only what I was doing, but everything connected with it . . .

Presently I managed to unobtrusively work my way close to Elna, and talked to her as I went on with my work.

"Notice anything peculiar about this liner?" I muttered.

"Yes. It isn't a time liner at all."

"Any idea what it is?"

"None at all. Have you?"

I shook my head. "Not yet; but a vague idea is forming."

She nodded and went on hauling the sheets of metal.

As I went on with my work I began to take stock of those about me. The man nearest me was young—not more than twenty-five, I felt sure, with a lean but clever face, and lank hair. He caught my look and turned a face that shone with perspiration towards me.

"What brings you here?" he asked, from the side of his mouth as we struggled with the corner of the switchboard to get it into position.

"Revenge," I answered in a low voice. "I intend to destroy Elnak Jelfel."

"Then you're mad," he said cryptically. "Men have died in this Age for less than that."

"In other Ages, men live to accomplish," I answered him. "I belong to 2000, and this girl over to my left with the fair hair is my closest friend. She belongs to 20000. She's Elna Folsen, daughter of the Time Corporation President—now dead."

He looked at her and shrugged his shoulders slightly. "It's hell here—espe-

cially for the women. Keep your eye skinned for this pig, Kariso. He's death on us! One day I'm going to kill him!" The fellow's bony hand clenched fiercely on the metal he was holding.

"How do you propose doing it?" I asked.

"I don't know—but I'm going to! What's your name?"

"Sandford Lee."

"Mine's Lan Ronnit. I hope we will be friends?"

"Of course," I assured him, and at that our conversation ceased, for the brilliant eyes of Kariso had turned towards us in vague suspicion.

Our work continued for a space, then suddenly Kariso called a halt. I stopped, expecting him to say something to me for talking; but evidently he was not concerned with my remarks. Instead he motioned to four men standing on a platform on the exterior of the half-completed machine. Grouped before the quartet were black box-like affairs from which depended tough, heavily insulated cables.

"Stand clear whilst the metal is tested!" Kariso snapped. "Hurry!"

We all stood back, grateful for the respite. I stood between Elna and the young man Ronnit, watching the proceedings with interest.

There was a sudden roar, and from the black boxes there sprang a pale yellow beam that struck the metal and enveloped it in yellow effulgence. The workers blinked, but continued watching through half-closed eyes. Every sheet that had been assembled was carefully tested; then again Kariso called a halt.

"Well, what's the reading?" he bawled, above the frightful din.

The operator of the centrally situated machine surveyed something on the top of the various boxes.

"Pressure, 460. Resistance, 990. Tem-

perature resistance, minus 273.1, Centigrade," he answered.

"Right!" Kariso snapped. "That'll do. Get back to work, the lot of you."

We returned to our tasks, but something was sticking in the back of my mind, trying to see the light. As yet it had not formed clearly, but I spared no mental effort to bring it into being.

"I'm an inventor," said Lan Ronnit presently, leaning towards me. "I got shoved in this place because I accidentally shot one of Jelfel's guards. I'm here for life—unless a miracle happens. If that miracle ever does happen, I know the way out to the surface. We're underground here, you know."

Silently we worked on. "What have you invented?" I asked presently.

He placed his ear close to mine as we drove home a rivet together. "I know how to make all organic substances invisible."

I felt a little thrill at that and looked into his lean face and dark eyes.

"You actually mean you have found it?" I insisted. "Not only in theory?"

"No—absolutely in practice."

"But how do you—" I stopped dead. Kariso was advancing towards us, his brutal face anything but reassuring.

"You two have got a lot to say, haven't you?" he asked sourly. "What's it all about?"

We neither of us replied, and at that silence Kariso's powerful arm shot out and his hand closed upon the collar of Lan Ronnit's overalls. He jerked him round with a single irresistible muscular movement.

"Trying to spread trouble again, eh, Ronnit?" he asked with a coarse laugh. "I got you once for doing that, and I'll do it again if necessary!"

Ronnit did not speak. I, too, stood silent, my fists clenched. The rest of the workers looked on in mute concentration.

"You've done nothing yet," Kariso resumed, "but I may as well warn you not to go any further. My temper's short! Now get busy!" He released Ronnit with a vicious thrust that flung him sideways against the metal of the switchboard.

I looked sideways at his face and saw it set in hard lines in the glaring light of the arcs. He bit his lower lip tenaciously.

"The swine! The misbegotten snake!" he breathed venomously. "One day I'm going to make him pay, the spawn of Belial . . ."

He said no more than that; it was not safe. Kariso never relaxed his vigilance for a moment, and throughout the long night the work went on. By the time the shift was finished, in the early hours of the new day, I was about ready to drop from exhaustion. All the workers were the same. True, the work on the time liner—I call it such at this stage purely for convenience—had progressed enormously, but at the cost of much human suffering and energy. I turned weary eyes to behold Elna nearby, drooping from fatigue, her face smothered in sticky dust and metal filings. She flung up a lazy arm and wiped the streaming perspiration from her forehead as I looked at her.

"Halt!" Kariso snapped—the energy of the man was phenomenal. Instantly work ceased. With that, Kariso departed to his own unknown quarters, and the day overseer took charge. Elna and I, along with the workers, were led from the Machine Department, down numberless passages until we came to what were evidently the sleeping and eating quarters. Four vast rooms, two lined with tables, and two lined with small, hard beds. One department for the men, and one for the women.

At the main doorway I took leave of Elna for the time being and went in with

Lan Ronnit for a meal. This proved to be some abominable stuff like thin glue, which, although revolting to my refined palate, was consumed with avidity by my fellows. However, I was desperately hungry, so I ate it, and curiously enough enjoyed it . . .

Then, like so many cattle, we were herded into the sleeping room. By a little wrangling among ourselves I managed to get the bed next to Ronnit. I felt that, if what he had told me was correct, he might prove very useful somewhere in my plans. Imagine my utter disgust, therefore, when he went straight to sleep without uttering a word!

Worn out in body and mind, I stretched myself on the bed and began to fall asleep; then suddenly I was awake again, in that curious fashion that sometimes precedes genuine sleep. I sat up, my mind cannily clear for an instant. I spoke aloud:

"Minus 273.1 degrees Centigrade! The temperature of absolute zero—of space! Elnek Jelfel is building a space ship!"

For an instant I knew that fact quite clearly; then I fell back again on the bed and dropped into a deep sleep, worried nevertheless by distracting and distorting dreams. But from those dreams I followed up the absolutely true fact that had been borne to my brain, sharpened by that brief "false sleep."

Jelfel was not building a time liner, but a space ship. Why?

CHAPTER XIV

Escape

I AWOKE to the insistent, violent clanging of a bell. A hard boot kicked me on the shin, and I became conscious of my bull-necked guard of the day—or rather the night—before, clutching my shoulder and shaking me

vigorously.

"Like a cup of tea before you start?" he asked sourly. "Get up—and quick!"

I glanced at the massive pulsating clock situated high up on the far wall. The hour was five p.m. Time to get ready for the night shift once again. I fell out of the bed and scrambled into my uniform. As I sat at breakfast—once again that glue-like stuff—my mind went over what I had thought of in that transient waking moment the morning before. "Minus 273.1 degrees Centigrade." The metal of the supposed time liner was made to stand the temperature of absolute zero—of space. No time machine needed to stand that, except in rare cases—such as the experience of Elna and myself during our flight into futurity.

"Thinking?" asked a voice, and I looked round to behold the cadaverous face of Lan Ronnit.

"Ronnit, do you know what Jelfel is building?" I asked him. "Do you know what we're working upon?"

"Of course. A time liner, similar to those owned by the Time Corporation, which Jelfel destroyed."

"No, we're not," I said quietly. "It's a space ship."

"A space ship!" Ronnit's jaw dropped. "You don't mean that? What on earth should Jelfel want a space ship for? How do you know, anyhow?"

"Merely by the metal being of such a quality as to resist a Centigrade temperature of minus 273.1 degrees—outer space temperature. I just wonder what that devil is getting at?" I murmured to myself. "All the time I've known him, he's something different at the back of schemes to what he reveals openly."

"Space travel is impossible," Ronnit murmured. "Gravitative forces—law of acceleration. All that has been proved inimical to human life flying through space. Even Jelfel couldn't overcome

that, clever though he is."

"Nothing is impossible to science," I said quietly. "I am not altogether sure that Jelfel *did* find out how to navigate space." And I freely admit that I had no conception in my mind at that time of any other theory. In any case I had no chance to say anything further, for Bull-Neck ordered us out to work.

I gripped Elna's hand reassuringly as I met her, and she returned me a steady, courageous gaze. I wished I could communicate my knowledge to her, but the guard was too heavy and too alert. Perhaps later on, I promised myself.

My mind on this shift was far improved upon the preceding one. Evidently the full power of that curious brain operation was commencing to take effect. I found, as I worked, that my conceptions were very clear and alert. My reasoning powers, also, were extremely astute.

As I worked, I asked myself once again the same question I had asked so many times before. Why should Jelfel go to such enormous lengths to merely transfer his surplus population to another Age? Why such marvelous inventions? Why such merciless tenacity of purpose? The whole scheme seemed to me to sideslip somewhere; there was no *reason* for it all. The whole thing revolved around a completely pointless plot. Jelfel was in many ways no ordinary man; his powers of reasoning and capacity for scientific invention were almost unequaled in earthly records . . . He had come from apparently nowhere and mastered and subjected this Age of Problems. His motives were wrapped about in the deepest mystery. His Age was shielded from outside interference by etheric screens. What *was* he driving at? . . .

I knew that, despite his amazing ability, he had not the powers necessary to conceive entirely by his own initiative

the immensely complicated details of a space ship. Scientists had proved space travel to be impossible, in so far that no human being could stand the strain. And yet here was Jelfel constructing a space ship! And nobody, save I, had had the mental keenness to note the fact. Either Jelfel had had a staggeringly brilliant brain storm, or else a higher intelligence than his own was governing his movements. This latter possibility took quite a hold on my imagination.

"Say, what do you think you're here for? A rest cure?"

That rasping voice broke into my train of thought and disturbed me. I turned, expecting to find myself addressed, but rather to my surprise it was Lan Ronnit once again. He had been standing motionless, completely lost in thought, until Kariso's voice had guiltily awakened him into activity.

"I warned you yesterday, Ronnit, and I warned you a day or two before. I'm about sick of warning you. See!"

Ronnit turned slowly. "Can't a man think?" he demanded in a low, fierce voice.

Kariso stared in astonishment for a moment, then his lips projected in a fierce pout.

"You insolent hound! You dare to say that?"

"Why not?" Ronnit snapped, with growing warmth, encouraged by the silently approving workers about him, who had stopped work to listen and, if necessary, act. "Who in hell are you to say whether I shall think or not? You're only one of the little-brained community in any case. If you weren't, you wouldn't be just a bullying overseer!"

I held my breath at that statement. I really felt certain that Kariso would be stricken with apoplexy, so red did his face become. Then, whipping out one of the customary metal "cats" from

his belt, he swung it around with all his strength, and struck Ronnit across the face. Instantly blood began to seep from deep weals in his cheeks.

"Shame!" came a low murmur.

"Down him!"

"Knock him down, Ronnit!"

"SILENCE!" Kariso thundered. "Back to your work, you scum! Back—and quick—or by heaven you'll all get a taste!" He wheeled round again on the still, silent, set-faced Ronnit. "I'll teach you to defy orders. Take that!" He retracted his powerful arm for another mighty sweeping cut, and I saw the light of fear spring into Ronnit's face. He ducked in readiness for the blow . . . But the blow never fell.

I intervened instead, almost involuntarily. With a strength that astonished me—as it had often done since that brain operation—I sprang forward and seized Kariso's forearm, twisting it with all my strength. To my amazement there was a sharp crack as the bone snapped beneath my single-handed clutch.

A low roaring of approval began to come from the workers. Shouts of derision made themselves heard above the din of the machinery. A torrent of the vilest, filthiest expletives were hurled at the now cursing, groaning Kariso. Even so, despite his injury, he flung himself forward upon me like a wild beast.

I waited for his spring, then reaching forward I clutched him by the shoulder and trousers belt, lifted him on high, and flung him with incredible force over the heads of the workers. He landed with a crash upon some metalwork in the far corner, and instantly uttered a piercing scream.

From beneath him there came a blinding flash and a puff of blue smoke. Flames began to envelop his form and reach up to the roof with alarming speed. I stood appalled.

"That's done it!" Ronnit breathed, clutching my arm. "You've thrown him on that machine we use for smelting metal. It projects rays of pure heat through those lenses. See—the weight of his body has short-circuited the thing. The place is catching fire! Don't let any of those rays strike you, if you value your life! . . ."

I stared at the melting machine like one in a dream. I remembered having seen it when I commenced work in this place, had felt its awful heat. Now, by some curious short-circuit, the thing was radiating rays in all directions, and everywhere the rays touched, metal or otherwise, flames began to spring forth.

The din of voices rose to a mighty, swelling roar. Smoke filled the great workshop.

"Fire! FIRE!"

"This is our chance," Ronnit muttered, clutching my arm. "We'll never be seen in this confusion. I owe you a big debt for killing Kariso, and I'm going to repay it. Come with me."

"Elna—quickly!" I panted, clutching her arm and whirling her to me. "Keep with me . . . Right, Ronnit; lead on!"

CHAPTER XV

Invisibility

I DO not clearly remember to this day how Lan Ronnit succeeded in getting the three of us out of the blazing workroom. I have a dim memory of desperate fighting with panic-stricken workers, of mighty blows and shovings, of struggling through jammed doorways, heaving and pushing through a maze of passages, floundering up steps and down slopes, until at last we had shaken off the greater number of the workers and were standing, the three of us, beneath the stars with the glowing lights of the movable city to our left.

Lan Ronnit blew hard and wiped his cuff across his blood and sweat streaked face.

"Well, we did it," he said. "You all right?"

A brief examination proved that neither Elna or I were hurt much, save for a matter of bruises and contusions.

"You helped me, Lee," Ronnit said gratefully taking my hand. "For that, my eternal thanks. I shall help you in return. I have been in this city since birth, whereas you two have only just arrived. There is nothing I do not know about the place. If we are careful we can reach my home. Come."

We followed him once again by a wide detour of the city. We went over open fields, beneath the Emanation Towers of Jelfel's shield of vibrations, across a small river—by way of a bridge, the river being used for electric power—and finally gained the outermost of the movable houses. After a brief look around Ronnit made some dexterous movements with the lock, and flung open the door.

"Quickly!" he breathed, and Elna and I hopped inside and stood waiting in the dark.

"I'm not putting the lights on just at the moment," Ronnit explained. "We'll move to a special secret place of mine before we do that. Just stay here a moment and wait."

His footsteps receded down a metal passage, and then we heard him busy with what sounded to be catches and switches. Presently there came a low whirring. In a moment I recognized it as the atomic motor affixed to the building itself.

Almost immediately afterwards the entire house began to move, and slowly gathered speed.

"Hang on!" Ronnit's voice came from somewhere up the passage. "We'll be all right in a moment. . . ."

I held Elna tightly in the darkness as the moving edifice lurched from left to right and dipped up and down in the most giddy fashion. Then I fancied I heard a low gurgling sound, very much like flowing water. The speed of the 'house-motor' began to decrease and at last ceased altogether. A light snapped on, and I beheld a vision of a short metal passage, with a neat little combined living and control room beyond.

Ronnit turned from his switches with a faint grin on his lean face.

"Welcome!" he said, with a flourish. "This is just a portion of my humble abode—but you are more than welcome to it. Nor need you fear molestation."

"Where are we?" Elna asked curiously.

"At the bottom of the very river which Jelfel uses for his power house! You know, there's a delicious irony in doing it!"

"The bottom of the river," I repeated. "But I didn't think these things were capable of going under water?"

"They're not, as a rule," Ronnit calmly answered. "I have already told you that I am an inventor. Not only have I so sheathed my home that it can be subterranean whenever necessary, but it can also stay under water indefinitely, there being a perfect air regulating system. I also have it equipped with tractors, so that, if necessary, it can travel over any sort of land. I have found it most useful in the past to be able to go under water when making experiments . . . But please come into the living room," and he led us away from the combined control and general room into an adjacent, beautifully neat apartment, switched on the heater, and motioned us to easy chairs.

"Make yourselves comfortable. I'll just bathe this cut face of mine, then I'll bring in some food. And it *will* be food!"

The meal was distinctly enjoyable, and it was remarkable how much more active we all felt after we had disposed of it . . . After its conclusion we sat round the heater beneath a diffused electric light, and Lan Ronnit expanded from the cowed, weary worker into a young man of remarkable theories and propositions.

"I didn't think when I told you last of my invisibility discovery that I should so soon be able to prove it," he remarked with a faint smile. "That, however, is by the way. I have solved it, and as I know you both to be firm friends of mind from now on I'm going to explain it to you. It may be useful in overcoming this devil of a Jelfel—for, God knows, he needs wiping out! I was planning to have a try myself in any case, but your aid will make it easier. But, to my point. Nothing is visible—actual source of light excluded—except by the amount of light radiated or reflected from the object we view. That's so, isn't it?"

"AS I understand it, light is a wave motion in the ether, assimilated to heat, electricity, and X-rays. A sort of to-and-fro variation of electrical force, accompanied by one of magnetic force. The two variations are inseparable, therefore the presence of one must imply the other," said I.

Ronnit laughed slightly.

"Just the old school of physics, eh?" he exclaimed. "I said *reflected* light, Lee—not the actual source of light. I suppose you'll be telling me next what is already known about *actual* light, and that is that wave-lengths from one forty thousandth to one eighty thousandth of an inch are visible to the eye? Well, it's not that that I am concerned with. Stopping light at its source is too big a problem. But this is how I worked out my problem. Light, upon striking a

material object, generates heat. That, of course, you know. Radiant heat and light—and electric waves—are all allied to each other, and move at the same speed of 186,000 miles a second. . . . Now, we come to my point. When we look at an object—say you yourself for example, and forgive me calling you an 'object'—I only see you because you are reflecting light *and* radiant heat or energy back to me. You are not the source of light, you are the medium by which it is reflecting itself. If you were in dead black, completely enveloped, I should have much greater difficulty in seeing you than if you were in snow white from head to toe. Everything in the whole earth that we see, we merely see by reflection from either stellar or artificial light. That correct?"

"Quite," I assented. "I see you have studied the idea of reflection closely."

"Radiation is the correct word, Lee. Radiant energy is not heat, of course. Heat is purely the kinetic energy of molecules. Radiant energy constitutes a form of light, after the light has struck the body concerned, but in dealing with ordinary radiant energy we have to ascend to temperatures which no human could stand. Ordinarily, radiant energy constitutes the heat energy of a hot body, which is transformed into a kind of undulatory energy. This, at incidence with a material body is partly absorbed and re-transformed into heat, partially reflected, and, unless the body happens to be quite opaque, is partly transmitted as well. So far, so good.

"Now, the higher the temperature of a body the shorter is the wave length of its radiation. That is the basis of my work. Radiant heat, energy, electricity, everything is directly due to the action of light; I don't need my calculations to prove that. Now, I have found that by projecting a given wavelength I can cut out the heat waves that make a

human being—or anything organic—visible to the eye. A human being, with an average temperature of 98 degrees F. has scarcely any heat radiation when you compare it with solar heat waves, electric arcs, and what not. *But*, and this is my point, nothing organic would be visible to us at all, if it wasn't for this particular radiation of radiant energy. Light alone couldn't do it. Now, once again. Both light reflection and radiant energy reflection from a human being move in a transverse direction—that is, the direction of movement is perpendicular to the direction of vibration. . . .

"You have followed me so far. Now let me revert to an instance which in essence is the secret of my invisibility wave length. If one takes a crystal of tourmaline it will split up a beam of light into two beams, which travel with different velocities, and are hence unequally refracted. Each beam is of course plane-polarized. Tourmaline crystal has the odd property of absorbing one of these beams so that the light transmitted is plane-polarized. Now, here's the point. Two tourmaline crystals placed with their axes parallel will allow light to pass through; but if they are crossed the light is completely cut out, since the plane-polarized beam which the first will allow to pass is immediately plane-polarized by the second . . .

"Now you have it. That curious quality which is supposed to be absorption of light is actually *radiation* of a wavelength. It is infinitesimally small, but it has the power of turning light, if we can regard it for a moment as a *positive* state—like electricity—into a similar positive state. Hence, the one repels the other, and the result is no light at all! Like repels like, of course. Now, likewise it repels radiant energy of any body, which is embodied in light, and is the *necessary addition* to light if light is to be made visible at all. . . . Thus,

by finding the frequency of this particular and entirely unknown wave-length of tourmaline, I have succeeded, by the emanation of a compound of various crystals amongst which tourmaline is predominant, in producing an invisible wave-length that stops light from ever emanating from an organic body. I haven't yet attempted inorganic substances because they radiate no appreciable energy. The radiation from a human being is slight enough in all conscience, but it is enough to enable me to block it. . . . Of course, the more powerful a radiant energy there is—take the boiling point of helium, 268.7° C, for instance—the more strength my wave length has to have. I'll perfect that, later, however. For the time being I'm satisfied with having solved how to make a human being invisible. . . ."

"I must congratulate you, Ronnit," I said heartily. "You've made a great achievement. But there is one thing I don't quite see."

"Well?" His lean face was eager to answer.

"I can follow your making a human being invisible—but what about the clothes they wear? They're organic, and have no heat."

"No heat? Come, come! Bodily radiation keeps clothes warm whilst you wear them, though not so warm as the body inside them, of course. Being of a lower radiation than the body itself they are, if anything, more easy to make invisible than the body itself, for my wave-length can incorporate lower radiations where it has not the strength as yet to tackle the higher."

"I see," I said thoughtfully. "And does this wave-length go through solids?"

"Believe me, it's perfect!" Ronnit said, slapping his knee emphatically. "Of course it goes through solids—just the same as radio waves, etc. And there is

another thing that happens. Some curious magnetism in the body causes the invisible wave-length to follow the body upon which it is trained, no matter where it may go, just the same as radio waves follow a wireless set—only that radio waves are everywhere, whereas my own wave-length only magnetizes itself to the particular object upon which it is focused. My limit of wavelength is 12 miles. Past that distance it has no effect."

"Like the wavelength of a remote wireless station being unheard at all," I nodded. "It seems to me, though, Ronnit, as though other people who happen to unconsciously intercept the wavelength would also become invisible."

"No, I've guarded against that, even. For every human being there is a particular fixed rate of light and radiant energy emanation, highest in animals if they are hotter than a human being. Now, by determining with perfect accuracy beforehand—I will show you my instrument later, which works pretty much on the same idea as a compass—the radiation of the subject to be made invisible, and attuning the wavelength to that absolute degree, nobody else can be affected because they are not in 'sympathy' with that length. Just the same, once again, as tuning-in a radio set. You wouldn't expect to hear Jelfel speaking on a wavelength of 1600 metres if you tuned in to say, Polar City in 2000 with a wavelength of 280, would you? Of course not. The two are different frequencies. So are human beings. No two are alike . . . Anything else?"

"NO," I said, taking a deep breath. "You've thought of everything, Ronnit."

"Come and see for yourselves," he invited, and led the way through the living room into another apartment; this time a remarkably well-equipped labor-

atory. Apart from countless beakers and test-tubes I noticed a considerable amount of electrical apparatus lining the walls. The benches themselves were composed of such a queer-looking metal, dull slaty blue in shade, that I asked Ronnit what it was. Once again he gave that queer little smile that seemed to be the shield of a mind of genius.

"Junison," he said calmly. "An isotope. Found it myself, and I have an idea that its better than Jelfel's beloved iralium, junison is Atomic Number 140—atomic weight 280. The atoms are of course of two kinds, to form the isotope, and I think the atoms are those of iralium and calcinium, the latter: my own invention. However, there's no time to go into the details, beyond the fact that junison blocks, completely and effectually, all forms of vibration—even radio waves. My invisibility wavelength won't even pass through it, that's why I have to project my beam through these iralium walls, which permit of the passage of anything. One of these days I'm going to use junison as a safeguard against eavesdropping radio, disintegrators, ray-guns, and the like!" He laughed, and turning waved his hand to two instruments resembling cameras perched upon tripods, six neat wires in all leading back to a switchboard and complicated contrivance on the junison bench itself.

"These are the invisibility machines. You notice the actual wavelength transmitter is on a bench of junison, so that, apart from other things, it will not absorb any of the power into itself. Now, I'll switch it on."

He moved a button and a low, steady humming emanated from the curious apparatus.

"Now, Miss Folsen," Ronnit said, "perhaps you would like to try? You will come to no harm."

"Willingly," Elna assented, and under

Ronnit's direction walked forward to a spot in front of the nearest invisibility 'camera.' I stared, astonished. As she moved forward she suddenly became transparent, then at another step she had disappeared completely. The space was empty! Ronnit grinned at my amazement.

"That's effective enough for you?" he asked. "Now, if this mechanism were not switched off, that wavelength would continue to keep Miss Folsen invisible no matter where she went, providing she didn't exceed the twelve mile limit. It will follow her and keep to her through solid metal, through everything but junison. I determined her emanation of radiation before I switched the thing on her. She's 1600. Always rather higher in a woman than a man, you know."

I reached out my hand, and instantly it came into contact with something I couldn't see. I pulled at it, and I must confess I felt a trifle foolish when I heard Elna's voice exclaim:

"When you've quite finished trying to pull the sleeve out of my overall, Sandy, I'll be much obliged!"

Ronnit switched the mechanism off and Elna slowly reappeared.

"Naturally," she said, walking forward, "the object is still there—must take up the same amount of space. The only thing different is that it isn't seen. Of course, nobody could walk *through* you; it would mean another dimension to do that."

Ronnit nodded, and I looked at the universal bearings of the wavelength instrument, which permitted it to turn in any direction.

"Ronnit," I said, "You've discovered one of the most powerful weapons with which to outwit Jelfel that has yet been devised. Good work! You're only a young man yet; by middle age Jelfel won't have a look-in."

"He'll be gone long before I'm middle

aged!" Ronnit replied, setting his jaw. Then, relaxing again. "There's something else I want to tell you. Somewhere, deep under the earth, under this very city maybe, is the secret of eternal life!"

I looked at him sharply. "That savors of a medieval alchemist, Ronnit."

"Maybe it does, but it's true all the same. I had some records once, before my unfortunate escapade with Jelfel's guard that landed me in prison, in which it related the story of one explorer, Jansen, who penetrated, quite by accident the monstrous underground caverns beneath our feet, left from the atomic bomb war of 2468. You will know of it. However, he found that strange trees had evolved underground, utterly unknown to botany—products of the intensely electrified, magnetic soil. These trees, he found, have the property of instant propagation both in themselves and other objects. Unfortunately, there the record ends, because he was killed shortly after—Jansen, I mean. But I've never given up hope of finding those trees—they will promote life for ever if properly handled. Just think of that!"

"One might not find it so wonderful to have life indefinitely prolonged," I said quietly. "After all, the allotted life span of Man is enough, packed with troubles and vicissitudes as it is. . . . However, it's only a story, after all. We have more important matters to deal with at the moment. Come back into the dining room—or drawing room—and let's discuss matters. I want to decide on a plan of action."

We returned to our chairs before the radiator.

"For some reason," I said, "Jelfel has led everybody astray by his time liner stories. True, he has—or believes he has—destroyed everything in preceding Ages; he has also wrecked every time liner. But also, besides getting the secret of time travel he is building space

ships! We have got to find out why, and stop it! Jelfel is the sort of man who will do anything, unless we check him. I am still wondering, too, why it is that this Age at some future point is to be seen as a blackened and charred wilderness. It would seem that same deadly fire is to happen, something world-devouring and destroying, that will blast Jelfel and all his perpetrations off the face of the earth. I just wonder what!"

I strained my mentality in a tremendous effort, and for an instant I caught a glimpse of devouring flame, blue-white and ruthless. Then the vision went, and I relaxed with a sigh. The answer still evaded me.

"There is only one thing to do," Elna said, practical as usual, "and that is to carry the business now right into the enemy's camp. Surely, if invisible, we ought to be able to accomplish something?"

"Most certainly," I assented, and rose to my feet in sudden decision. "The sooner we get moving the sooner we will avert whatever disaster is coming. Ronnit, I'm going to hear what Jelfel has to say."

He nodded. "All right; it's safe enough with my invisibility system. Come into the lab and I'll fix you up."

Once there it did not take long to make me invisible, and as I moved about the instrument turned in its universal bearings and followed me.

"I'll just lift the house up to the bank," Ronnit said, and disappeared to the controls. Within a few moments we were up on the river bank, with the door open to the now somewhat distant, winking lights of the movable city.

"Shan't be long," I said. "And for heaven's sake keep your eye on that invisibility wavelength of yours. It'll be all up if I'm landed in full view."

"Don't worry. Nothing will go wrong."

I TURNED away and commenced to walk across the stretch of dark land separating me from the city. I turned once and saw the darkened house of Ronnit's against the grey skyline; then I went on again steadily. It amused me immensely when I reached the main stretch leading to Jelfel's headquarters, to behold workers and ordinary individuals moving to and fro and never once seeing me. I felt astoundingly secure.

With perfect calmness I went to the door at the base of the observation tower, found that it opened, fortunately, to my touch, and slipped inside. Jelfel was there, amongst his instruments, so absorbed that he had not heard my entry (for of course sound was not blocked in any way) nor had he seen the door open and shut. I stood contemplating him from a distance for a while, then the nature of his work began to impress me.

He was seated at a desk, a pair of headphones clamped over his ears, reaching behind him ever and again to twist carefully numbered dials or shift coils of wire to different positions. From somewhere came the buzzing of a powerful generator. I noted, too, that slung over the desk on a level with his mouth, was a microphone.

Presently, after much alteration of his dials and coils he turned to the array of buttons and different colored bulbs on the desk itself—which looked for all the world like a very complicated type of old-fashioned typewriter. Beyond question there were quite as many keys and intricacies.

A blue bulb lit up amongst its extinguished neighbors, and with that Jelfel spoke. The words he uttered nearly caused me to betray my presence with a gasp.

"This is Station JLB. Earth calling to Jupiter! Elnek Jelfel speaking . . . This

is earth calling to Jupiter! Earth—calling—to—Jupiter. . . . Hallo! Hallo!" His words dinned into my brain. Earth calling Jupiter! What astounding thing was the man up to? Talking by apparently ordinary radio to the giant planet.

I stared at him intensely, so intensely indeed that that remarkable quality within my brain, the power of exerting an almost X-ray eyesight, suddenly began to operate! I was interested in the resumption of this practically forgotten faculty, and allowed it to have full play, gazing at Jelfel so intensely that I felt sure he would look up and see me—although of course this was impossible. He was, however, too absorbed in his task for that.

CHAPTER XVI

The Jovian Ambassador

HOW am I to describe my sensations at what my super-vision revealed? My gaze penetrated clean through Jelfel's black clothing and I beheld his skeleton form . . . But it was not the form of a human being, as we know it! I felt I must clutch something for support, so astounding and revolting was the shock.

The skeleton of his head was perfectly visible, and also a formation that corresponded very favorably with a human spine, chest bones, and ribs—but at the base of the ribs were six joints like small legs neatly curled out of position. The arms were likewise. Normal to the elbow—then they branched out into three sets of hands! The real Jelfel ended at his waist in six small legs—the rest of him was nothing more or less than pure artificiality, wonderfully constructed by some brilliant scientific mind to meet his natural figure. The normal legs were neatly couched inside an artificial waist of some unknown and extremely light metal, and

then were added the artificial legs—evidently so constructed that he could maintain his balance faultlessly—the false forearms and hands. I remembered for a moment that day long ago, when I had shaken hands with him at the outset of these extraordinary experiences—how cold his hand had felt; how hard and metallic his voice had always seemed. As I saw him in that moment I realized that Elnek Jelfel was a creature of only about two feet in height, with six small centripetal legs, two small arms, six hands, and an earthly looking trunk, head and face.

I wondered if I was dreaming, even though I knew I was perfectly wide awake and viewing not an exceptionally clever earth man, but a being from some other planet, so cleverly disguised in his formation by some super-surgical knowledge of an unknown world, that he would, and did, pass for an Earthling anywhere. I closed my eyes for an instant, and when I looked again their X-ray power had gone. I saw the Jelfel I had always known, seated at his complicated desk, sideways to my view.

I reflected. Of course, most creatures would carry their brain-cases upright. Was it after all so extraordinary that Jelfel should resemble an Earthling in facial features? His eyes were the most unusual part, for, as I have described before now, they were a pure sea green, possessing such a cold and icy quality in their wintry depths, that they seemed to be mirrors of a mind without a soul, that could sink to unnamed and frightful cruelties if it were ever necessary to do so. The cold bleakness of an arctic dawn was far more friendly and offered far more hope, than did those two round orbs of soul-freezing green. Yes, in those he was apart from an Earthling.

His body, obviously, in its normal state, was adapted for colossal gravita-

tion. The six legs were intended to carry the weight of the trunk. Where else then but on Jupiter, the giant planet? I felt utterly astounded. Small wonder that he was so clever! Small wonder that he had risen to scientific genius beyond the reach of any Earthling; small wonder that he had appeared from apparently nowhere and subdued and controlled this Age of Problems with such iron ruthlessness that his very name inspired awe and terror.

He was nothing more or less than a Jovian! I felt it now—I was convinced.

More than ever I realized the imperative need of obliterating him—of ridding earth of his evil menace. And clearly, too, I now saw why he had been so ruthless in his destruction of time machines. He had some plan of his own that would undoubtedly bode ill for Earthlings if it were not nipped in the bud pretty quickly.

I took a step closer to him. He was still operating his various buttons and bulbs. Then abruptly a red bulb glowed into life beside the blue one. A tube of orange light poured forth its radiance from some concealed point behind his coils and numbered dials.

"Earth calling!" he said again. "You will have to take this message in the earth language. I can't give it in our own tongue because of these vocal chords of mine. That Station Zagribut?"

In the headphones I fancied I detected an answer in a high pitched treble voice.

"Yes, this is Elnek Jelfel. Take this down and give it to His Serenity. Work is progressing rapidly with the space ships; have destroyed all the Ages preceding this one. So soon as the first fleet of space ships is ready I will dispatch the first load of humans for vivisection, so you may find out how to adapt our own organisms to life upon this planet."

I CAUGHT my breath and stared in dazed horror. Vivisection! Earthlings, to be torn asunder by these Jovian monsters, so that they could study earthly formation at leisure! Good God! The man was a fiend incarnate—unless he was acting under orders.

"I have them all in the hollow of my hand," he answered, in reply to some unknown question. "There has been trouble at one of the workshops—a fire, but as it destroyed my most dangerous enemy, a master pilot of the Time Liner Corporation, who knew far more than was good for him, it has proved a better thing than I expected. Station JLB closing down now, with my humblest respects and obeisances to His Serenity. May he continue to exercise his All Wise counsel over Zagribut . . . I will call to-morrow night at the same time—21.0. hrs Earth Time Positive Meridian."

Jelfel removed his headphones, sat looking at me without seeing me, and then snapped out the bulbs and stopped the generator that had made possible this astounding speech over four hundred odd million miles of void. How it was done I did not find out until a little later.

I confess I felt very strongly tempted to obliterate him there and then with his own ray-gun, tucked so invitingly in his belt. I stayed the impulse for only one reason: when I did strike it must be effectual, I must first find out with whom he was communicating, and what the secret was behind his nefarious endeavors.

I continued watching him for a space, then as he crossed over to instruments of no vital importance I took the opportunity to more closely examine the battery of coils and numbered dials with which he had busied himself during his astounding communication with Jupiter. Thanks once again to my sharpened mind, I began to comprehend the

system he had used—a system so involved, so intricate, that I doubt if an ordinary Earth-man could have understood it, unless he had been an Einstein or a Clerk Maxwell.

The basis of the transmission was electrical of course—converted solar energy once again, I had reason to think. Behind the massive panel with the tuning dials I beheld what was purely a complicated form of radio transmitter. I noticed that the receiving apparatus was slightly different, in so far that from the tuning aerial coil there projected two bars—two black pencils—not unlike the carbons of an arclight. These pencils pointed directly at a silver-colored screen fixed to the wall itself. Closer inspection revealed to me that platinum wires were fused through this screen, and evidently went to some point outside. Having got so far there was nothing more to learn here; the exterior of the building would provide the remainder.

I left Jelfel brooding over his various machines, and cautiously departed.

A close examination of the wall without very soon revealed the two wires I sought. These led to the summit of the observation tower. Without any hesitation I set to work to climb the tower's latticed metal work, and presently gained the upward flight of steps. Within ten minutes I was once again upon that circular platform, commanding a view of the entire, glittering, movable city.

A short search revealed the two thick, insulated platinum wires once again, leading to an object resembling a searchlight—which certainly had been put there since my last visit to this tower. The exact center of this "searchlight" was composed of metal, wafer-thin, a metal entirely unknown to me. What was inside the instrument itself I had not the vaguest idea at that time. I only knew the entire "searchlight" was connected

by wires and cables to three boxes, with more covered switches and coils, all evidently essential to the control of the curious device.

I felt I was on the borders of the solution. The "searchlight" was pointed skywards, to a spot midway between horizon and zenith. I looked above through the transfiguring, semi-translucent glow of the etheric vibration screen and beheld the stars—and Jupiter. He hung there, pale orange by reason of the intervening screen, almost directly in line with the "searchlight." With a sudden effort of concentration I comprehended the entire device—the receiving apparatus at least. There was much about the transmitter, involving as it did waves of such frequency as to both penetrate the etheric vibration and the Heavyside Layer, and lose nothing of their power during the trip through space, that even up to the time of my writing this narrative has not been thoroughly solved by our most brilliant radio experts and electricians.

However, to return to the receiving apparatus. The system used was magnetized radio waves, far different from our own painfully infantile system of ordinary radio waves. These outflowing magnetized radio waves from Jupiter (I piece this together in the light of recent discoveries on the matter, also) were drawn through trackless space to this spot on the earth, and then converted into their original sounds. Instead of the radiated waves of radio failing after they had proceeded some distance from Jupiter, the tremendous magnetic force, contained within this searchlight device, drew them through the void, protecting them, saving them from distortion, and bringing them to the receiver with hardly any depreciation in their original value.

I felt that the Jovian scientists, and Jelfel in particular, were taking a leaf

out of the sun's book. In some way they had duplicated the power that is the sun's patent—the harnessing of electrical particles, and the conversion of that energy into practical fundamentals upon which to work. In this case, radio.

I felt very small and insignificant for a moment as I stood there and comprehended all this. Yet I had not the least shadow of doubt in my mind that it was the truth. And, somehow, I had once again that strange feeling in the back of my mind that something could be done with what I had discovered. Somehow that magnetism could be utilized . . . For the moment, however, I could not see my way clear.

I descended the tower and ruminated for a while when I reached the ground. I had seen the lay of the land and I knew some of Jelfel's innermost secrets. It was impossible to do anything further without mapping a decided course of action.

Therefore I turned back to Lan Ronnit's abode; I was a much wiser and much grimmer man.

CHAPTER XVII

Trapped!

IT was daylight, and we had all rested and refreshed ourselves before I put the whole matter before Elna and Lan Ronnit. When I had concluded my story they sat for a space in dazed horror.

"Vivisection! Jupiter!" Ronnit breathed. "Phew!"

"It's—it's massacre!" Elna said tensely, gripping my arm. "Sandy, we've got to stop it at all costs."

"We're going to," I assured her grimly. "There is only one thing that worries me. Even the elimination of Jelfel and all his trappings won't stop the menace for good. The Jovians know how to cross space—witness Jelfel—and

the death of Jelfel won't interfere with them in the least. There will come a brief respite—then the trouble will be back again, only far worse. We can't compete with minds such as the Jovians possess."

Elna sank into a gloomy silence at that. Ronnit sat with his square chin cupped in his hands.

"Wonder what their scheme is, outside of vivisection?" he said, looking at me. I shrugged. "Power, I suppose. In every age, man in every form, intelligence in every aspect, desires dominance. The less sentimental the intelligence is, the more chance they stand of getting what they want. It is the law of progress—the survival of the fittest. Jelfel, I take it, is the Jovian Ambassador, and a brilliant one. None have ever known of his coming; they all take him for an Earthling, which is quite natural. Only my own peculiar power of X-ray eyesight ever proved the truth about him."

"That doesn't explain the reason for it all," Elna said.

"As I see it, the reason is simply conquest—or maybe over-population. The Jovians, for reasons of their own, desire the earth on which to spread their activities. Jelfel, their ambassador, has destroyed practically everybody in every Age from 2000 to this one—or at least it appears that he has. What few are left can be very soon subjected by such minds as the Jovians obviously possess. Time-travelling is evidently one thing that the Jovians do not know, and Jelfel has set out to discover the secret—thereby accomplishing the dual move of destroying those in past ages likely to hinder his activities, and also of learning the secret of time travel at the same time."

"It's certainly a mighty problem," Ronnit muttered. "We can't stop the rest of the damnable Jovians even if

we can stop Jelfel. Somehow, though, we've got to save the people of this Age from being sent to Jupiter just for examination by Jovian science. The whole thing's ghastly!"

"If science is correct there cannot be a great deal of life on Jupiter," I said thoughtfully. "Jupiter is considered to be in a comparatively molten state, with the possible exception of the curious Great Red Spot; and there isn't room on that for a tremendous number of beings. I cannot imagine why such high intelligence comes to be upon a world still believed to be comparatively molten. The whole thing outrages the laws of Nature."

"The exact nature of the circumstances doesn't really interest us," Elna said. "Our task is to obliterate these devils—and quickly."

I spread my hands helplessly. "Easily said, Elna. But *how*?"

"I don't know—yet." She sank her head in her hands and thought deeply.

For a long time we sat thus, three beings against a planet. Then I rose to my feet.

"There's only one thing to do," I said grimly. "We must wipe out Jelfel and all his machinery first, then we must marshal all our forces for war against Jupiter. I cannot see any other way out—not yet. . . . And yet, there is a far better idea at the back of my mind striving to see the light." I concentrated for a moment; then shrugged. "Well, no matter. I can't place it properly. For the time being we'll have to follow out the plan I've arranged—tonight."

"You are going to kill Jelfel?" Elna asked tensely.

I nodded. "With no more compunction than I would a rattlesnake. I'm going to blow him to atoms with his own ray gun."

"And destroy his machinery?"

"With his own vibration machine."

Elna rose to her feet decisively. "Then I'm coming with you!"

"But, Elna, this is dangerous work!" I protested; but she brushed my objections right to one side.

"I've been in many a pickle with you before, Sandy, and I'm not stopping now. You needn't try and stop me, because I've not the slightest intention of listening."

"All right," I sighed. "You win—as usual."

"And what about me?" Lan Ronnit asked. "I want to do my share."

"Your share will be guarding those two invisibility projectors of yours—and for God's sake don't let anything happen to spoil their effect."

Ronnit chuckled slightly. "You needn't worry. Nothing will ever happen . . ."

THE coming of night once again found Elna and me making our way towards the city. Calculating from the previous night's time I knew it would be shortly time for Jelfel to again communicate with his Jovian allies. There was little doubt that we would find him in his usual place in the instrument room.

The surmise was correct. We entered the vast hall, as his back was turned, holding each others' hands so that we might keep in touch. Being invisible to each other, the only system was actual physical contact.

For a while we stood looking at Jelfel, then he turned his face towards us. I fully expected that he was going to sit at his enigmatic desk and commence his radio communication. Instead, however, he strolled into the next great apartment. Following him, we found him busy with the Emanator—that remarkable instrument for detecting objects at a distance by their vibrations, and which I have outlined elsewhere in my

narrative. I did not feel particularly comfortable at finding the Emanator to be the subject of his interest . . .

Going closer to him we heard him murmur "670." Then he turned about and strolled back into the main instrument room. In a few minutes he was busy with the light-wave trap, and to my horror there appeared upon the ground-glass screen a picture of Lan Ronnit's movable house perched upon the river bank. The view was not particularly clear owing to the only illuminant being the lights from the city; but there was no mistaking it.

Jelfel studied it broodingly for a while, then he glanced down at a written sheet on the bench before him. In silence he made a few calculations, then crossed over to yet another of his infinite variety of apparatus. A switch shot into place, there was a momentary spark, then silence. I looked again at the screen, feeling Elna's hand tighten on my arm—but the house of Ronnit was still there unharmed.

Jelfel, smiled strangely, switched off the light-wave trap and then seated himself, as though waiting for something to happen . . .

It happened almost immediately—and how am I to describe my horror and consternation? For, quite suddenly, Elna and I became fully visible! The shield of invisibility dropped from us like a cloak!

I remember we both stood staring in dumb amazement into Jelfel's faintly mocking, green eyes.

"A really unexpected pleasure," he said drily, rising to his feet. "You know, Commander, it comes as a great pleasure to me to know that you are not dead after all; it comes as even greater pleasure, too, to know that you are still opposing me—and Miss Folson . . . But I am discourteous. Won't you be seated?"

He drew forth chairs from under the desk and we mechanically obeyed his behest. My mind was a turmoil of unexplained thoughts. I shot a glance at the closed door but Jelfel merely waved his hand.

"Useless, Commander, much as I regret to state it," he said, his tones now so soft and deadly courteous that I realized he was in his most dangerous mood.

"It would appear that you have the upper hand, Jelfel," I answered, with a quiet and determined grimness, determined to retaliate.

"I more than 'appear,' Commander—I *have!*" he replied, closing his thin lips into a merciless slit. Then, in words of ice: "For a long time both of you have been meddling in affairs that do not concern you. I may as well tell you that I am about tired of it—and I have no intention of tolerating it any longer! I thought you were killed in the fire in the workshop, but my scouts soon discovered that you were in hiding in the abode of Lan Ronnit—another meddler! My scouts discovered everything about you, all about the invisibility system—everything. The particulars are on that sheet of paper on the bench. I knew of your coming tonight from my scouts, of course. I have not destroyed Lan Ronnit's home because I desire the particulars of his invisibility system; it will be both interesting and instructive—but I have destroyed him! I have vibrated his body and his soul, granting he possessed one, into nothingness. He is dust! You saw me do that, after discovering the location with the Emitter. As regards the sudden disappearance of the invisibility wavelength—which details my scouts discovered with a remote control radio tuned to Lan Ronnit's abode—I have merely placed around Ronnit's abode an electrical barrier—a contrawise wavelength—which

has, in effect, heterodyned it; at least intercepted it far enough to prevent you being invisible any longer . . . And now, Commander Lee, Miss Folsom, what have you to say?" His cold green eyes bored at us with all the soulless malignancy of which they were capable.

"You have destroyed Lan Ronnit?" I asked in a low voice.

"I have already said so!"

"I came here to kill you, Jelfel," I said, consumed with inward fury. "For too long you have seen fit to slay and destroy without mercy or question. Lan Ronnit was a genius—a future prince of invention—and you *destroy* him! You damnable, crawling, filthy Jovian!"

I leapt to my feet in sudden uncontrollable rage, my arm retracted for a blow.

"Wait!" Jelfel commanded. "Sit down, and don't be a fool! You know what happened last time. I am at an end of my patience. *Sit down!*"

I obeyed, and dropped my arm hopelessly to my side.

"So you have discovered that I am a Jovian?" he said, in steely tones. "How?"

"By the aid of the brain that I once told you was superior to your own," I retorted savagely.

"This is no time for humour, Commander. The proper explanation at once, please!"

Briefly, having no alternative, I explained the circumstances. When I had finished his face was more set and hard than I had ever seen it.

"Commander, I have been mistaken in you," he said, somewhat to my surprise. "If you are capable of such power, you are capable of anything. Unquestionably your mind is greater than mine. You are dangerous! You must be destroyed—and this woman, too."

"That remark is becoming monotonous, Jelfel," I said coldly.

"I assure you the monotony now will be amply compensated for later on," he countered smoothly, his rapier-like sarcasm flourishing into bitter life. "Since you evidently know all about me—since you know that I'm a damnable, crawling, filthy Jovian, I will tell you that, which you have been striving to know. The reason why I am on this ghastly planet at all—the reason for the Age of Problems. You shall know of the horror to come for the human race. The human race!"—he laughed harshly—"the most motely, bigoted collection of self-righteous, narrow brained, non-intelligent idiots I have ever seen from cosmos to cosmos. What an interesting time my fellow beings will have during their vivisection operations on Jupiter." He laughed again, and the great hall echoed with the deadliness of it . . .

CHAPTER XVIII

The Story of the Jovians

ELNEK JELFEL resumed his conversation in a condescending tone.

"You Earthlings have long been incorrect in your theories about Jupiter—or Ran, as we call it. I have seen from your records that you regard Jupiter as a planet of steaming, furious heat, with the Great Red Spot as the commencement of slowly forming solidity. You have even assumed from the planet's brightness that heat is the cause. You have deduced, with commendable brilliance, that it cannot be the sun because it is so far away. Truly wonderful, I am sure! Heat, then, is the only cause . . . But no, you are all entirely wrong. The only part you have correct are the mathematical computations, to wit, that Jupiter is of 1400 times the earth's volume, that his equatorial diameter is 88,500 miles, and that his revolution round the sun occupies 11.86 earthly years. That is correct. We Jovians are

exactly as you have seen me—squat creatures of many legs, to bear up under terrific gravitation. These attachments of mine make up the extra in gravity, besides helping me to pass as an Earthling . . . Not all my fellows are so earthly in face, however. I am an exception. A genuine, full-blooded Jovian is rather repulsive to judge from your standards . . . But that is by the way.

"Jupiter, or Ran, my friends, is not a boiling planet. Quite the reverse. It is a planet of ice, save for the Great Red Spot on the southern equatorial belt. Jupiter cooled many thousands of years ago, and being so far from the sun became a frozen world. Our race, up to that period, had been mainly an underground one—a brilliant and very intellectual race. Then came the time when our leading scientist, Krot, found that the contracting of the outer surface with the cold was causing dangerous subsidences within. He found a system of continuous heat, a system associated with radium emanation, of which element Jupiter has more than enough, and work was immediately commenced on the surface to make a portion of it habitable . . . Be it understood that our race had never evolved to any great numbers. We are few in number, but colossal in intelligence. What I have accomplished on the earth with my inventions is but a fragment of what my master, Roth Granod, His Serenity, the All-Wise, has accomplished. However, we chose a certain stretch upon the ice on the equatorial belt, and the radium machines and synthetic air apparatuses were set to work. The outcome was, that eventually we had a perfect spot of comfort, above ground, and yet surrounded, beyond given limits, by a world of void and merciless ice and cold. So much Krot and Rath Granod accomplished . . .

"I have seen from your records that scientists have not always recorded the

presence of the Great Red Spot. It is only mentioned about the time we set to work, which of course is correct . . .

Of late, however, our race has grown tired of confinement; we seek a world of youth, or least of maturity. A world where we can expand our intellect. The earth was chosen, and it was the will of the All-Wise that I come as Ambassador. So I came to earth in a space ship, but by some mathematical complexity which will greatly interest the super-mind of the All-Wise, when I relate it to him, I arrived here many hundreds of years behind the time calculated. Where the time was lost I do not know—there are many mysteries in the cosmos. So I came into this Age, conquered it by superior intelligence, and made it the Age of Problems. I learned also a great secret—time travel. My instructions were to destroy as many humans as I could without endangering myself. You know how I did that. The space-ships, by the way, are remote controlled from Jupiter itself, and need no pilot. That is how Earthlings will be sent back to Jupiter, for there will be no pilots to take them . . .”

“I cannot understand the necessity for altering your organisms,” I said. “You stand earthly conditions quite well apparently.”

“Only because certain vital differences were made in my internal organs before I came to the earth. I took my life in my hands in coming here. Our scientists had only guessed at what sort of organs I would need, by study of the earth. As it happened they were near enough to correctness to enable me to live without much discomfort—except for these accoutrements. Needless to relate our telescopes are far superior to yours. We can quite distinctly see your cities and people with our instruments . . . For the future, in order to be safe, my fellow beings wish to carefully study terres-

trial organisms, so that they may make no mistakes when they commence the migration in real earnest . . .

“During my early visits to past ages I met Miss Folson here, and from her it was that I learned two things. One was the utter foolishness of Men, and the realization of what a mistake it was—and is—to let such little minds, unable to grasp anything beyond length, breadth, thickness, populate this fair young planet at all. The other thing I discovered was who possessed the secret of time travelling . . .”

Jelfel stopped and looked at us thoughtfully. “I have told you all this so that you may be saved the trouble of finding it out for yourselves,” he said, sardonically.

“There are one or two points you have not made clear,” I remarked, shelving my intense hatred of the man for a moment. “For how long has Jupiter been really habitable?”

“Tens of thousands of years. At the time when earth was commencing to cool, Jupiter’s interior race was at its pomp. The exterior of Jupiter at that time was beginning to freeze, because, as I have said, of its distance from the sun. Always we have lived in the lighted underworld of our planet, warmed by the internal fires, until, as I told you, we sought the surface. Our race was born inside the planet instead of outside, but born into such a world of radium warmth and light that we were not blind, helpless, insectile creatures, but sighted, intelligent beings, given odd bodies to bear with the pull of our ruthless planet, but compensated by great and far-reaching intellect.”

“That rather upsets our theories,” I said. “A large body must always take longer to cool than a small one.”

“Quite correct,” Jelfel said, “but the radiation from the surface of the body depends you must admit, upon the con-

ditions surrounding it. My planet has no warmth upon its surface because of sun's distance. The earth is more fortunate—it is warmed both within and without. The exterior of Jupiter, cooled into ice long before the earth had passed even into the melting period, simply because of the absence of solar heat. Jupiter is still warm in its center, of course. Jupiter's brightness in your heavens is the combined effect of two things,—radium emanation and ice-reflection. This latter is so piled up that to Earthlings it looks like dense cloud . . . Yes, a queer world—but upon so lovely a young world as earth our race can flourish."

"You will come to earth as Jovians, with centepedial legs?" Elna put in.

Jelfel looked at her. "No. We shall

come to the earth in the bodies of the Earthlings that are sent to Jupiter! Our brains will be removed from our Jovian bodies, and after examination of the various organs of an earthly body, will be planted in bodies of the Earthlings, from which the original brains have been removed and laid aside for future examination. I fancy Rath Granod will find much of interest in the investigation of these human brains . . ."

"You'll never succeed in so vile, so ungodly a plan!" I said steadily.

Jelfel laughed slightly. "Still trying to put up resistance, eh, Commander? Why don't you and Miss Folsom accept the inevitable? I have you both in the hollow of my hand—and you shall be my first subjects to be sent to Ran. That, is a great honor, my friends . . ."

END OF PART III

Science Questionnaire

1. On what factor of the universe does man's life depend? (See page 5.)
2. How has heat been defined? (See page 5.)
3. What is the condition of matter at the absolute zero? (See page 6.)
4. What paradox does the absolute zero present to our minds? (See page 6.)
5. To what is all heat on the earth directly or indirectly due? (See page 6.)
6. Is there water power enough in the United States to supply its needs? (See page 7.)
7. How can the moon supply us with power? (See page 7.)
8. What fanciful names are applied to water powers? (See page 8.)
9. What is absolute zero centigrade? (See page 43.)
10. What causes visibility? (See page 48.)
11. What wavelengths of the ether constitute light? (See page 48.)
12. What is the speed of heat waves, light waves and electric waves? (See page 49.)
13. What is the relation of the direction of light to the direction of its vibration? (See page 49.)
14. Describe the action of tourmaline crystals on light? (See page 49.)
15. What is the boiling point of helium? (See page 50.)
16. What are size and orbit data of the planet Jupiter? (See page 60.)
17. How could a beat-note be produced. (See page 80.)
18. Could the production of a beat-note produce visible rays from high-frequency rays by heterodyning? (See page 80.)
19. How may the nervous system of man be described? (See page 90.)
20. What is the meaning of the word "gular"? (See page 115.)
21. What kind of light should be used in a dense fog? (See page 127.)

The People of the Arrow

The story of ancient human life on our planet forms the basis of this interesting narration by one of our best known authors. It will be found quite exciting and an interesting description of primitive life and combats.

By P. SCHUYLER MILLER

FOR seven days the wet earth had smoked. A shroud of gray mist lay close over the world, thick and evil, hiding the face of the Sun-father. In the night the darkness clung stifflingly about the skin huts of the Arrow-people and they lay without sleep, listening to the dark.

The night spoke with many voices of evil. The river flowed with an almost soundless rushing, chuckling over heaped-up reefs of boulders left by the Great Ice. It tore hungrily at the black flank of the mountain, naked and steaming with the new, rich life that had followed the Cold. Great moist clots of the rich earth fell away with the slithering tear of rootlets, and the soft plop of their falling and the avid gurgle of the river faded away again into the rushing silence.

The forest spoke, though no wind stirred. Its voice was the whisper of many branches, swaying and pressing in the night, of branches drawing secretly aside from the things that went four-footedly and two-footedly along the silent-needled paths beneath them. Branches murmuring of things that flitted soundlessly among them and above them through the clinging mists. Branches suddenly hushed with fear of things that were unseen.

Kor stood sniffing the night. The gash in his side was stiff and sore, caked still with dried blood and grease and the red and yellow paint of battle. The Old One had been hard to kill, twisted though he was by many scars, but the

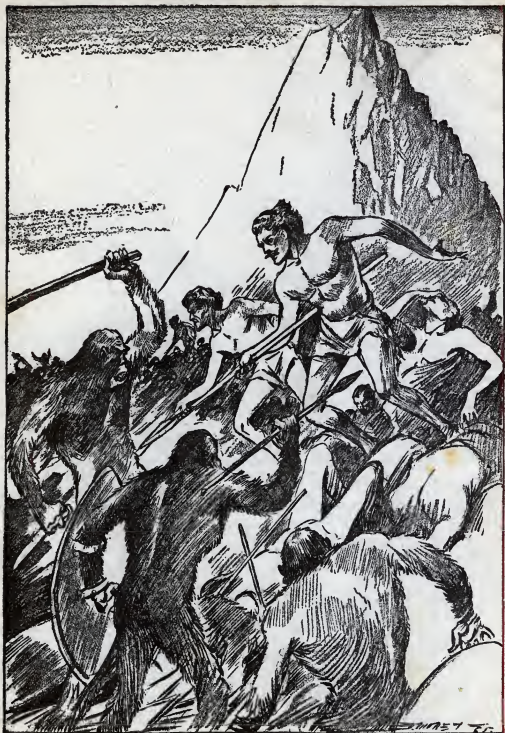
totem of his place hung from its thong about the sinewy throat of Kor, the Wolf-Slayer. Kor was Old One of the Arrow-people! Kor was the voice of the Great Wolf, warrior brother of the Sun-father!

And Kor feared the night.

Not with a knowing fear. His terror was the atavistic terror of his race, in-born in forgotten ages. The memories told of great, green plains to the southward, where the Arrow-people had dwelt since there was time, but the fear was before that. Silver rivers twisted like flung thongs through the green uplands and bushy copses edged their rippling shallows. Food-beasts thundered on tireless hoofs across those rolling steppes, unwary, unafraid of men, and the sky above shining lakes was black with the wings of water-fowl. Great fish basked in the pebbled pools and flung themselves, mad with the lust of spawning, into the singing shallows.

That was the old Land—the good Land—the green Land of the memories. The right hand of the Sun-father had fallen in wrath upon it. The rains fled and his flaming face was never hidden. The green plains grew sere and brown under his pitiless gaze; fewer and fewer were the beasts that men might kill, fewer and warier the birds. Fire scourged the prairie and the game fled before it, far through the red night. The dust came, stripping the flame-seared uplands, choking the shallow lakes.

The wrath of the Sun-father was terrible to behold, and the Arrow-people



Kor's spear hissed low under an upflung arm into the hairy body of the leading thing.

quailed in fear beneath it. Their children died unborn, their old men perished with the ancient memories unspoken. Their women were few and ugly and their warriors gaunt with days of famine.

But the Sun-father was just. With his flaming right hand he lashed the green prairies and made of them a desert of rock and barren sands, but with his left hand he sent the Great Wolf, his sky-brother, to give new life to the People of the Arrow.

Kor was Old One then, the memories said. Kor, father of Kor—father of many Kors through the years. Behind his footsteps the Arrow-people followed the trail of the Great Wolf, northward through the mountains, their faces turned to the star that does not move, the night-eye of the Sun-father, ever watching, ever knowing. They came to the herds of food beasts and fed as the children of the Wolf fed and moved again as the wolves moved, with the desert at their backs.

Kor, the son of Kor—son of many Kors since that first one who heard the voice of the Wolf—Kor was Old One when they came to the bitter waters. For long the Arrow-people dwelt in plenty by the shores, finding new foods, learning new lives, forgetting old memories. There were many children among the skin huts and plump and comely wives for the Old One and his bowmen. Kor died and another was Old One in his stead. Kor was of the memories, forgotten. The Arrow-people scattered and the ways of one village were no longer the ways of their sun-brothers. Their bows sang in warfare, each with the other. Their footsteps led along the shores of the great sea and beyond it where other, greater mountains stared

down at them from the sky's edge and vast black forests frowned from the steepes. They forgot the Great Wolf, arrow-brother of the Sun-father in his war on darkness. But a few remembered.

KOR remembered. Kor, son of Kor—Kor, the Wolf-Slayer. Naked he went where the snows lay deep on the high peaks and slew the great white Wolf-King of the north and drank his hot blood where it spilled out on the snow. The wolf's fat healed his wounds and the skin of the wolf hung about his loins. Son of the Great Wolf he became, by right of the blood of that Wolf-son he had slain, and when he came again to the huddle of skin huts beside the great north-reaching river, the Arrow-people welcomed him and sang again the memories and danced the Wolf-dance before the cave of Mog.

He came into the firelight—Mog, the Old One, the Sun-Drinker—and the thrust of his great spear brushed the skin of the white wolf where it lay against Kor's side. Kor's knife came in his hand and his eyes were keen in the firelight. His voice gave the cry of the Wolf-King and beyond the darkness the Great Wolf answered, wailing through the night.

Mog heard it—Mog, the Sun-Drinker—Mog, dancing the blind and wavering Sun-dance, drunk with the red, stinging blood of the Sun that was his alone, save on the day of feasting when all the people of the Arrow drank and leaped and shouted in honor of their father in the sky.

Mog heard it, and there was fear in his eyes. The blood of the Sun ran in his veins like his own blood, and the Sun was sleeping. Sleep was heavy in his eyes and in his limbs and clouded his brain. Sleep made the night waver and blur about him, and out of it came the

eager clamor of the Wolf and a keen knife thrusting under the clumsy lunge of his spear.

Kor was Old One of the Arrow-people!

He led them slowly northward along the great, rushing river, following the Wolf as of yore. Some cried against him among the people, but his spear was strong and quick. The hills closed in behind them, black with spruce and pine and drooping hemlock. At night the skin huts of the Arrow-people huddled close by the river's edge in a clearing torn from the long grass. With the Sun-coming the bowmen lay in wait for the beasts that came to drink at the river, and there was no hunger among the people. But there was fear.

Kor stood staring at the night. Fear clogged the bodies and dulled the senses of his people, as the Sun-blood had numbed the mind and body of Mog. Fear of the dark and the voices of the dark, and of the unknown that lay in the dark northland. Fear made more terrible by the gray, clinging fog of evil, that hid the bright face of the Sun-father.

He knew that fear. It lay in his own heart like a dull gnawing, but with it there was a yearning that made the ache seem small. The gap in the black hills beckoned him and the river lay lazy, like a silver pathway leading into the unseen. His blood throbbed in his temples and a queer nostalgia gripped him. He longed for open uplands dark with grazing herds and for the ripple of wind over the tall grasses and the river a shining ribbon across the world. He longed for the hungry wail of the wolf-pack running the clear night where the bright eye of the Sun-father gazed unhidden upon his children. And in his blood, driving him on and on, was the faith and knowledge that those things lay be-

fore him, somewhere beyond these mountains of cold and night.

He fingered the carved pendant that hung at his throat. Age had yellowed it and countless caressing fingers had worn it to a glistening smoothness, but its cunningly fashioned curves still prisoned the crouching body of a wolf, the great white Wolf-father who was brother of the Sun. Men still shaped wood and bone with their flint knives, but none so cunningly as this, nor had any of the Arrow-people seen bone so hard and fine and smooth.

For some time now the voices of the darkness had been stilled. A wan white light was filtering through the mist. Behind him the noises of the waking camp broke the early morning stillness—the crying of a child, the low murmur of women, the pat of the hunters' naked feet. As the sun climbed higher, Kor sensed a restless stirring of the fog-curtains. The surface of the river no longer steamed and the dark edge of the forest loomed closer. Streamers of vapor lay low over the meadow, twisting and coiling, like vast, grey serpents. And then on the moist skin of his naked body he felt the touch of cool fingers, and the grasses stirred and whispered eagerly in the freshening breeze.

He turned. High above the river he stood, a magnificent bronzed figure, his broad chest streaked with ziz-zag bands of graphite and ochre, the pelt of the white wolf twisted about his muscular waist. At his voice the bustle of the little encampment ceased and all eyes turned up to where he stood.

"Ho!" he shouted. "Ho, my people. The Sun-father smiles again. Today we follow the Wolf!"

It seemed, in the weeks that followed, that fog and darkness and fear had gone forever. The Sun-father smiled benignly from cloudless heavens and the game

came readily to their arrows and spears. Steadily the Arrow-folk moved north along the banks of the still-youthful Rhone, brimming with blue snow-water from the melting ice of a long, post-glacial winter. Their stomachs were full, and though now and again dark eyes turned fearfully toward the black barrier of the forest, no one grumbled audibly and in some the flame of Kor's own atavistic unrest was smouldering.

THEN, finally, Kor realized that a subtle change had come over the game. The little forest deer were more timid; they came watchfully to drink and it was no longer possible to slip within spearthrow. The great broad-horned stag of the forests they had not seen for many days, nor, though the mountains were pressing ever closer to the narrowing river, did hunters often find the spoor of the great cave bear or find the strewn bounty of his gartantuan fishing orgies.

They came to a pleasant bowl among the hills where the river widened and flowed more sluggishly, and the hills withdrew a little on the east. The grassy meadow should have thundered with the drumming hoofs of startled auroch herds, frightened by their coming. Only a raven sailed heavily above the forest, croaking dismally.

Here they camped. Kor was worried; why he could not say. Something in the atmosphere of the place disturbed him, and for the first time he forgot the urge that drove him northward. That night he sat alone before his hut, listening. Night after night he had sat thus, listening for the far-off crying of the wolf-packs, as it gave tongue along the northward trail. But now it did not come.

No game came to the meadow with dawn. That day they went hungry, and the next, and then with the third sun

Kor led his hunters out in search of meat. Mile after mile they followed the winding river without success. Then, where a tributary stream came tumbling down from the western hills and the forest wall loomed almost at their shoulder as they filed along, they found what they sought.

A well-trodden game trail wound down out of the forest past a cliff of whitish clay. Hoofs had beaten that way to the water and those same hoofs had pawed and cut at the savory soil of the salt-lick. The spoor was fresh—deer had been here within the day.

Superstition was submerged in the need to kill. Nor was the forest so terrible by day. Intent on the evidence of the trail he strode fearlessly into the shadow of the great pines. Two or three of his hunters followed; the others spread to examine the salt-lick and the nearby stream for suitable points of ambush.

In the half-dark of the forest it was difficult to read the spoor. The trail was a mass of tracks—aurochs, deer, moose, and with them the prints of carnivores great and small. They grew aware of the oppressive gloom and Kor found himself peering furtively down the shadowed aisles under the great, low-hanging hemlocks. He was about to turn back when his keen eyes caught an odd irregularity in the trail. He strode quickly forward. With a crackle of dry branches he plunged feet-first into a deep pit!

For a moment he lay stunned; then he sprang to his feet. He had missed by a hand's breadth a row of sharpened stakes driven point upward in the bottom of the pit. A stag or bison would have been impaled.

The pit had been dug by men!

Before he clambered out, Kor shouted for a twist of grass and a coal from the fire-ball that one man always carried.

The tinder-dry grass blazed furiously for a moment, revealing every corner of the pit. Imprinted in the wet clay were the marks of human feet, naked and huge. Nor were they the high-arched, narrow prints of Kor's own race. Flat, splayed, misshapen, these were the feet of apes rather than of men!

EVERY minute on that long back-trail seemed an age. The camp had been deserted, save for three young hunters left to supervise the fishing. Their women were alone with children and half a score of men too ancient for anything but flint-napping and memories. Kor dreaded what they would find in that unprotected camp.

He was not prepared for the horror that was there. Men and women lay in a welter of blood among the ruins of the skin huts. Their skulls were beaten in, their bodies gashed and torn and great masses of flesh ripped from them as by ravenous beasts. The air reeked with the stench of burnt flesh. Kor's lips tightened at the evidence of the terrible feast that had occurred.

Everywhere were the prints of those brutish feet. There had been scores of the things. The old men had gone down like felled deer and even the three young men, stalwart fighters though they were, had been literally torn to pieces by overwhelming odds. Four women and a child were dead. The rest were gone.

The things had had weapons. They found two huge knives, beaten out of coarse-grained flint with the crust still clinging to one side. The great gashes in the skulls and bodies of the dead had been made by something still huger and more terrible, and some bore the marks of wooden spears. These monsters killed by brute force. What were they, that mocked the shape of men?

Once, twice, he shouted the weird cry of his totem, and the voices of his men

rang with him in a demented howl of hate. Far above them on the wooded mountain side the wailing Wolf-song answered them. Fiercely he shook his chieftains' spear aloft and gave it tongue again, and again the answer came eerily from the cliffs, fainter, hungrier, eager for the kill. Every ear heard it; every eye blazed with a new fire. It was the voice of the Great Wolf! It was a sign!

The beast men were cunning in the dark. Their splay feet bore them tracelessly over the forest floor, by ways they knew of old. But the women of the Arrow-people had the blood of generations of fighters in their veins. They fought savagely, like wild things, until their captors beat them into submission. The trail they left was plain to the dull-est of Kor's men. And when it vanished, as the unconscious women were flung over brutish shoulders, Kor knew that he would not lose it again.

The scent of the things reeked in his nostrils. Hanging in the still air of the forest, the acrid fear-scent of the stolen women came plainly to them and reddened their flaming rage, but so overpowering, as almost to hide it, was the foul, musky odor of the beast-things, like the den-stench of the great flesh-eating beasts. It sickened them and poured red fury into their brains. Their eyes were keen in the darkness. And ever and again Kor gave whispering tongue to the clan-cry of the Wolf, and it seemed that the Wolf would answer from afar.

Night laid a deeper gloom over the blackfastness of the forest, but the reek of the burdened things was hotter and fresher in their nostrils and they ran bent low over the trail like great wolves questing. Deeper and deeper they plunged into the pillared darkness, and higher and higher they climbed, until they ran close under the cliff of riddled limestone that rimmed the valley on the west.

Caution was flung aside. They ran blindly, like men gone mad. And they *were* mad!

It was near daybreak. The sky, that they glimpsed through gaps in the forest, was graying and the shadowed aisles were taking on form again. Suddenly Kor saw the red glow of a fire.

They crept closer through the trees. The forest ended where the cliffs came down close to the river's edge, and in the open, built on a great flat rock, the embers of a huge campfire burned fitfully.

KOR'S eyes went to the cliffs. Two huge holes gaped at their base, black and ominous even in the growing light. And that light revealed the debris of an orgy that made the blood pound madly in his skull. He sprang to his feet. Blood-mad, his men were leaping past him into the open. Wolf-song, Sun-song, all were forgotten as he belowered the insane challenge of a man berserk.

The caves spewed out misshapen life, like bees pouring from a hive. The place stank of the things; their filth and refuse strewn the rocks—and now from their dens in the earth the beasts themselves came shambling.

They were smaller than a man. Their massive legs were bent and crooked, their backs warped until their great blunt paws hung far below their knees. Little red eyes peered under protruding brows; thick, sucking lips slavered and spewed out clucking speech. Man stood facing hairy, grizzled beasts, across a hundred feet of rock, as at Kor's wild scream a score of bowstrings sang.

The beasts went down like logs. Their mighty bodies stiffened with the shock, then beat and writhed in horrible contortions though bone-tipped hunting arrows stood out a foot behind their backs. Twice the bows of the Arrow-people

buzzed with death; twice the beast-things went down among the rocks in thrashing heaps. Then their dull brains woke and with a shambling lurch they charged.

They had outnumbered Kor's small force by nearly two to one. But the Arrows had changed those odds. Now in the forefront of his men the Wolf-Slayer flung his bow aside and raced with lifted spear to meet that charge.

Wall smashed into wall of flesh.. Kor's spear hissed low under an up-flung arm into the hairy body of the leading thing. Its strong shaft broke in Kor's hand as the thing went down; tearing it free he sprang across the sprawling body and drove the splintered wood with all his strength into the breast of the beast beyond.

It bellowed pain and blood. Its little red eyes blazed into his, as one huge fist came up clenched on a mighty pointed blade of flint. As that fist smashed down at his unprotected skull Kor tried to swerve, but the press of rushing bodies drove him on. His left hand reached for that bestial face and pushed it back; his right hand drove a knife again and again into that barrel-chest.

Twice the massive hand-axe came smashing down, tearing great gashes in the muscles of his back. He felt his left arm crumple, felt the other's brutal fingers at his neck, crushing the very vertebrae. His arm came up; with one last savage effort he drove his knife home in the hairy throat just under the thing's receding chin and let the sinews rip as he tore it out. Then suddenly that terrible grip on his spine was gone and all about him his men were stabbing in insane frenzy at the bloody carcasses of the monsters they had slain.

In the caves their women were fighting fiercely with females of the same demonic breed. Spawn of the things scratched and bit like bear cubs, before

they broke their misshapen backs. Sick with the horror of that which had occurred, Kor and his hunters killed until nothing lived to die. Their own meagre numbers were shrunken, for the things had fought with the strength and fury of the beasts they seemed. Yet, staring at them where they lay for the ravens to find, Kor knew that they were men.

HE stood on the cliff-top, high above the caves. Forests, black and menacing, reached away as far as he could see to the north, yet beyond that illimitable waste of darkness there was no bounding line of snow-capped mountains thrusting at the skies. The river flowed down out of that unknown north, and in the night, curtains of ghostly fire swayed and billowed among the stars beneath the glittering eye of the Sun-father.

What was there in the north, beyond the forests and the mountains, beyond the river's end and the end of rivers beyond that? It was the home of the gray man-things, but now the people of the Arrow would be ready and waiting when they came, and there would be war to the death between them until one race or both had vanished. They were few now, his people—all too few, now that their children were gone and many of their women—but they could rest here at the border of that unknown land, until they had grown again in strength and numbers and the time had come for Kor, or the son of Kor, to lead them on into the north where the Great Wolf waited for his children.

Kor—or the son of Kor? Which would it be? And as his fingers closed about the ivory emblem of the Wolf its mystery rose tantalizingly before him. For in the cave of the things they had found a giant, broken tusk, longer than a man, and Kor knew that its smooth white bone-stuff was the material from which the pendant had been carved, in ages gone and in another land.

Kor—or the son of Kor. Down out of forgotten times it had come, bearing the power and honor of the Wolf. Into the ages it would go, leading them on and on, passing from hand to hand—into the darksome forest-country of the beast-things, where cannibal fires burned evilly before ancient caves—into that visioned land beyond, land of vast sweeping meadows and mighty, fearless herds, of plenty and of peace. Always seeking the Great Wolf, always following the eerie keening of his earthly children, as they ran the hunger race through the long dark night.

He looked at it as it lay there in his cupped palms. A bit of carven bone, cunningly wrought, with magic woven in its lines and curves. Out of the memories it had come, into the hand of Kor, the son of Kor. For a while he would hold it, until that hand should weaken and let it fall. Until Kor was only a memory, and Kor's son, and all the people of the Arrow and the beast-things that they fought here in these strange new lands.

Then one day it would rest.

He wondered when.

THE END



Parasite

By HARL VINCENT

In this story Harl Vincent, to a considerable extent, departs from his usual treatment and enters what may be termed an absolutely new region of science fiction; his story, we are sure, will be appreciated by all of our readers, who will be glad to see a slightly different touch given to Harl Vincent's characters.

CHAPTER I

REPORTS on the phenomenon of August 5, 1955, were from a dozen eye-witnesses at widely separated points and differed considerably in detail. Some said that a wavering pencil of greenish light slashed soundlessly across the midnight sky, leaving a flickering brightness that persisted in its trail for some time afterward. Others maintained that the arched light streak was broad and unwavering, that a distinct shriek as of the protestation of a riven atmosphere accompanied its passage, that no brilliance was to be seen in its wake after the swift appearance and disappearance. None were sure of distance or direction, whether the light struck upward into the heavens or down towards earth from the inky sky. But all observers agreed that a shock resembling a mild earthquake had followed, and all were certain of the greenness of the unprecedented illumination. Scientists shrugged over the reports, admitted ungraciously that a meteorite may have fallen, and let it go at that.

It was a thing considered of insufficient importance even to make the front pages of the newspapers, yet it was to prove the beginning of a series of events widespread and serious in significance.

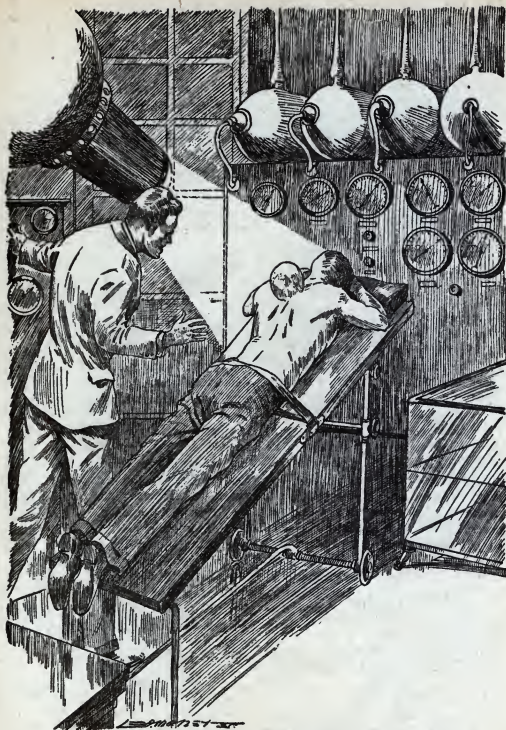
The one witness of the phenomenon who could have shed most light on the subject was unable to report, for good

and sufficient reason. He was a young garage mechanic, Eric Stull by name, and was returning from a late session with John Barleycorn, and Lady Luck in the form of a sizable crap game, when he saw the green luminescence reflected in the cracked windshield of his battered old flivver.

At first, vaguely aware of the goodly quantity and poor quality of the potations he had absorbed, he thought he was seeing things. Stopping the flivver with a shuddering jerk, he rubbed his eyes with a shaking hand. The green light was only the brighter and now was accompanied by an awe-inspiring wail that he took for the siren of a police car approaching at high speed from the rear. Pausing not to open the door of the flivver, he scrambled out over it and fell flat on the macadam.

It was a lonely back road that wound through an unsettled and hilly section of northern New Jersey. Stull, so frightened that his teeth chattered like castanets, lay where he had fallen and devoutly prayed for the sight of just one pair of friendly headlights. If only someone would come along, he was sure that his imagining of the ghostly light and the ghostlier wail would vanish. As it was, they only intensified and beat tortuously into his befuddled senses.

Suddenly he was cold sober, and leaped to his feet. These were not imaginings but incomprehensible realities. The green light, he saw, was a sweep-



Then he saw the thing, a milkily opalescent spheroid, the size of a cantaloupe, affixed to his friend's back.

ing curve painted across the sky, a curve that struck down from black nothingness directly toward him. The shriek of the terrifying visitant rose in pitch and violence, until it seemed that his eardrums must burst. He started to run.

Then it happened. Something struck like a bolt of lightning in the field not a hundred yards away, something that sent up a geyser of green flame hundreds of feet into the air and jarred the ground with such force that Stull was flung to his knees. After that there was silence save for the pattering all about him of stones and fragments of earth, and darkness save for the smouldering greenish glow over there in the field.

Mentally registering a fervent vow to climb the water wagon and remain there from this time on, he mustered up the courage to crawl off toward the thing which glowed in the crater it had battered into the earth from its own cradling. Reaching it, he stared open-mouthed over the rim of the pit, shielding his eyes from the heat and the eerie glare with the back of his hand.

Again he had cause to doubt the evidence of his own eyes. Down there in the pit was a gleaming ovoid which had split apart and was slowly opening its cleanly severed halves. A swarm of translucent, phosphorescent globules like huge tailless tadpoles or some sort of jelly-fish was rising from its interior, rising, without apparent means of support or evidence of individual exertion, and dispersing in the surrounding gloom. The things gave the impression somehow of being alive and Stull noted that each globule, as it left the circle of radiation from the split ovoid, lost its luminosity and became completely invisible. The creatures, if creatures they were, emitted no sound of any sort; the silence was complete, ghastly.

Stull shuddered with a fresh acces-

sion of fear. Then came a shock between his shoulder blades, that was like the blow of a sledge hammer. He slipped into the blankness of insensibility.

EARLY next morning, in a village ten miles away, Ann Pelton awoke with a splitting headache and the feeling that she had suffered from a horrible nightmare. She groaned and rolled over in bed, observing that the hands of her alarm clock had not yet reached the position to set off its customary tinkling call. She had almost an hour to sleep and tried to compose herself befittingly.

But there was no more sleep for Ann this morning. In addition to the headache, she now became conscious of a throbbing pain between her shoulders and an almost intolerable prickling sensation that spread over the surface of her entire body. Something was very much wrong with her. She wriggled painfully from between the sheets, sat up, and then lurched to her feet, where she stood swaying weakly. It seemed that a great weight was attached to her back; she bent under it and her knees sagged beneath her. Clawing at the aching spot between her shoulders, she found that nothing was there. Somehow she thought for a rueful moment of Sinbad and his "Old Man of the Sea." But nothing was there, nothing could have happened to her. She was still dreaming.

A surge of alien thoughts swept away her individuality for an instant, leaving her trembling and in cold perspiration. It must be she was going insane. Terror-stricken, she staggered to her mirror.

Ann Pelton was a young woman of intelligence, good breeding, and unquestioned impeccability. Her health always had been excellent, her life simple, her habits regular. But now, as she saw her reflection in the glass, she recoiled,

as she would before a dissolute old crone of the streets. Her skin had taken on an unhealthy, mottled appearance; her eyes were glassy, and the muscles of her face had tensed, drawing her mouth into a twisted sneer. She was another and repulsive personality.

Worst of all were the thoughts that came unbidden into her mind. Perverse, bitter and melancholy thoughts that were entirely foreign to her nature. Mental images, when she closed her eyes against her abhorrent reflection, of an unfamiliar and freakish environment where darkness was the medium of visibility and light opaque, where living creatures were monstrosities of super-intelligence. Why—the thought struck her now as not so strange—these creatures were her own kind, or the kind she had become. Not in form, but in manner of thinking and of living. Her life must become like theirs, her every act and purpose must parallel theirs. Her first act—most important—must begin in the laboratory where she was employed. A chemical formula, something entirely new and unheard-of in result, raced through her mind. A new reagent... it was to be a miracle of chemistry...

Ann's customary painstaking morning ablutions and primpings were neglected. In a whirl of strange emotion, impelled by a power she did not now try to analyze, she scrambled into her clothes and hurried from the house. She would arrive at the chemical laboratory of the United Aniline Works long before her accustomed time, long before any of the other employes could be there to interfere with her plans.

PETER MARSLAND'S first class in the Crouseville High School was always his hardest. This morning it was particularly difficult. The boys were in a state of indignation over an edict of the previous day concerning forbidden

fraternity activities, the girls a-flutter with anticipatory whisperings concerning the Junior "Prom" of the coming night in a neighboring University town. To make matters worse, Guy "Red" Riddell, his dullest pupil but the athletic star of the High School, had risen twice in his seat, making sputtering sounds, and now threw himself forward over his desk, groaning and snorting in a most disconcerting manner.

"Riddell!" the instructor shouted. "You are out of order. Now, straighten up immediately and stop this nonsense, or leave the room and report to the Principal."

The student, fiery-crowned and husky of build, rose groggily and with the delayed action of a slow-motion picture. His usually flushed face was white and drawn; his eyes seemed to pop from their sockets.

"Someone socked me in the back," he complained. "Someone—"

"Enough!" bellowed Peter Marsland. "You will recite the first chapter of 'Caesar's Gallic Wars' here and now, before the class."

A wave of tittering swept the room. Red Riddell reciting in Latin!—it would take him a week of plugging before he'd get away with that.

"*Omnia Gallia est divisa in partes tres...*" In a monotonous voice quite unlike his own, the young football star went through the long quotation in faultless Latin. He did not once falter, nor did he deviate so much as a single syllable from the text.

Following the example of his class, Peter Marsland listened to the unprecedented performance, agape. Except for the droning of young Riddell's voice, one could have heard a pin drop in the classroom.

When he had finished, Red stalked purposefully up the aisle toward the teacher's desk. "Now," he grated, "I'm

going to teach this class. Things you don't know, Marsey, and never will know till I teach you. Things the world'll know soon enough—"

His voice was drowned out in a pandemonium of sound. The girls of the class screamed and stampeded for the door, the boys, shouting hoarsely, crowded to the front of the room. But this hysteria was caused not so much by the strange and belligerent attitude of Red Riddell as by the more alarming actions of the instructor.

Peter Marsland apparently had taken a fit. He was frothing at the mouth, waving his arms about his head and yelling like a man in delirium tremens.

"Get them away!" he shrieked above the general hubbub. "Get them off of me. *Things*. Things in the air—everywhere—things you can't see...get them, I say...."

Marsland pitched forward and lay still on the floor. A few of the bolder spirits among the boys attempted to give him first aid; the others fled in the wake of the scurrying girls.

IN a dozen widely separate localities in northern New Jersey and southern New York State, similar scenes were being enacted. Victims were of both sexes, in various walks of life, but in all cases were of the exceptional rather than the usual or average type. Some were intellectuals, some of superior physical development, others expert in the sciences, arts, or industrial pursuits. The attacks produced different immediate results, in some cases resulting in temporary unconsciousness, in others seeming to stimulate the victim to abnormal vitality and sudden activity. In all cases, however, the change in the character and appearance of the one seized was of marked and terrifying nature.

There was some discussion through-

out the area concerning the phenomenon of the night before, but it did not yet occur to anyone to couple this with the strange disease, which seemed to be manifesting itself. And, strangest of all, there seemed to be no way of finding out what really was wrong for the reason that all of the victims, once the initial seizure had expended itself, appeared well able to take care of themselves and their affairs, besides refusing to be interviewed by the health authorities or the newspapers.

In one instance, a police officer in the town of Zinchburgh had attempted to capture a citizen he thought to be suddenly crazed and had been bowled over and temporarily paralyzed by a power which he declared emanated from the man's finger tips. For telling this story he was booed by his comrades and suspended from the force for three days by his chief.

Perhaps the most exciting circumstance of the day, and the first one to earn black headlines in the tabloids, was the crashing in the heart of New York City of a plane which had performed amazing gyrations for the better part of an hour over the midtown section. The pilot of the plane, crushed and apparently lifeless, was dragged from the wreckage of the plane and rushed to Park Medical Center. It was thus that the medical profession came to have its first real knowledge of the affliction which had been visited on so many human beings in so short a space of time.

CLARY STONE, the pilot, was unconscious when they laid him on the operating table. A jagged wound that extended across his left cheek to a point in the scalp, well back of the ear had already stopped bleeding. Nurse Merritt cleaned it thoroughly, after which Dudley Cowan, Chief of the Surgical Staff, bent down to examine it.

"Strange," he murmured. "Autolysis is well along and granular tissue forming."

An interne was cutting away the pilot's clothing. "Cripes!" he gasped. "His skin's green."

Doctor Cowan's fingers commenced the exploration for broken bones. There was a sharp crackling sound, the flash of a four inch spark from the patient's skin. The surgeon cried out in pain and held up a hand the fingers of which were cramped into hooked talons. One of the nurses fainted. Cowan swore picturesquely.

"Cripes!" exclaimed the interne. "He's charged like a Leyden jar. He's a human dynamo."

"Shut up," snapped the surgeon, "and get him into the X-ray room."

Doctor Cowan disappeared after that and was not seen again until the X-ray films had been developed, when he showed up with a bandaged hand and a magnificent grouch. Doctor Fleure, the Roentgenologist, held up a fourteen by seventeen film for his inspection.

"See this, Doctor," he husked. "The entire nervous system she is outline perfect. Incredible! Here, see, the spinal cord from ninth rib to base of brain. All impenetrable as lead. Never have I witnessed such. This man he's fill with metal—or what?"

"Huh!" grunted the surgeon. "How about fractures? Let me see."

The X-ray man became more than ever excited. "Seventeen fractures in all, Doctor. Five ribs, right hip, pelvis three, with compound of right ulna. More on other films—all subperiosteal." He paused to gaze uncertainly into Doctor Cowan's incredulous eyes. "I see, you see too," he added lamely. "Maybe bones set themselves."

The surgeon growled something unintelligible into his VanDyke.

A frenzied interne burst into the

room. "Stone, the pilot," he babbled. "He's up—walking—demanding to be discharged. He's all smashed up, so help me, but he's as strong as an ox and mad as the devil. He's breaking up the furniture."

The resulting stream of profanity which issued from the cultured lips of Doctor Cowan would have done credit to a longshoreman. Then, his feelings relieved, he calmed down.

"Get Doctor Brown," he ordered. "We'll anaesthetize the patient and find out what this is all about. Or better yet, get the police—a squad of tear-gas bombers. Stone's wanted by the police anyway for stunt flying over the city."

The investigation thus initiated was to startle the scientific world.

CHAPTER II

BRET GARRISON, a well-to-do bachelor with a flair for experimental science, had been spending the morning in contemplation of curious facts which at first bore no apparent relation one to the other but were gradually impressing him as significant and more than ordinarily interesting. Without leaving his favorite chair he was building up something from nothing, forming speculative theories, and verging on amazing conclusions. But even Garrison, at this stage of the affair, did not fully appreciate the probabilities and possibilities.

A dabbler, in branches of pure physics and of electronics never delved into by the commercial research engineers, he was considered in some quarters to be the foremost scientist of the times. Besides, he was of adventurous disposition, was afraid of no man or beast, and cared nothing at all for public opinion or the criticisms of his confreres, with whom he was frequently at loggerheads due to his fearless sup-

port of theories with which they were at variance.

Though occasionally plunged into fits of abstraction that made him curtly uncommunicative, he was generally of a most companionable nature and was intensely human. He was tall and raw-boned, somewhat stooped, with lean, clean-shaven face and deep-set blue-gray eyes. The little hair he had was straw-colored, a fuzzy fringe just over his rather prominent ears. Though his tailor was a famous one, his coat always draped loosely askew over his angular frame and inevitably his trousers bagged at the knees.

His companion in many adventures and assistant in the mechanical work connected with a number of important scientific labors was Wayne Gordon. A few years younger than Garrison, who was forty, Gordon was his direct opposite in many ways. Garrison was an indefatigable worker, an insatiable student. Gordon was irresponsible, and frankly disclaimed the possession of any serious ambition; he had been a drifter, never holding a job for more than a year and had successively worked as mechanic, radio engineer, football coach, newscast reporter, helicopter cab operator, and what not. He was no student at all, but had been active in college athletics and had managed to keep himself in good physical trim ever since. He was a little above medium height, stocky and erect.

His flashing black eyes held always a gleam of good-humored mischief. He had a mop of wavy, dark hair that was the scientist's envy. His round, handsome face was marred only by a narrow scar on the left cheek, which always purpled when he was excited or angry.

Being opposites in nature and appearance, these two were good for each other. They were inseparable when either was in a difficulty.

Gordon knew nothing at all of the doings of the day or of the phenomenon of the night before. He had slept away the morning hours and only now was engaged in the daily routine of shivering and wriggling ecstatically under the stinging iciness of his shower.

WHEN the police and the doctors finished with Clary Stone they put him in a straight-jacket and moved him to a padded cell. But Doctor Cowan, following his own exhaustive examination and a consultation with the psychopaths and psychiatrists, was certain in his own mind that the unfortunate pilot was no victim of mental disease or derangement. He was equally certain that there was no pathological condition of any sort ever before encountered in medical history. The man had been torn, battered and crushed, and made physically sound again all within a period of two hours; it was obvious that his physical as well as mental processes were subject to an unknown force or control. He was still a living, thinking being, but was no longer human. Super-human, perhaps, in some ways, bestial in others.

Groping for enlightenment in the long list of anomalous and contradictory symptoms, Cowan was coming to a grudging decision which he refused to discuss with his associates. This was no case for medical men but one for—well, for his old friend, Bret Garrison. He brightened at the thought and, leaving behind him a reception room filled with waiting patients, hurried from his office.

Arriving by taxi at Garrison's old brownstone front in West Seventy-fourth Street, he lost no time in getting to the door bell. He was up the stairs two at a time as soon as the housekeeper had admitted him. In the library he found Bret at his desk, poring over an array of newspaper clippings with

which it was, as usual, cluttered.

The scientist straightened his lanky form and looked up. Seeing who his visitor was, he jumped to his feet, grasping the other's outstretched hand warmly.

"Dudley Cowan!" he exclaimed. "Glad to see you. What brings you here? Haven't seen you in years."

"Trouble brings me—as usual." The surgeon smiled up into the keen eyes of his friend, then sobered. "It's regarding a new patient at the hospital, an airplane pilot who cracked up."

"Clary Stone?" Garrison's long fingers reached for one of the clippings on the desk.

Cowan saw the headline, "Stunt Flyer Survives Crash. Medicos Confounded by Case. Stone a Freak, They Say." The surgeon swore under his breath; at least a part of the story had leaked out from the hospital, quite likely by way of the police.

"Yes, Clary Stone." Cowan dropped into the chair Garrison offered. "It's the damndest thing, Bret. He was terribly injured and has been healed without medical aid, healed from within. Normal physical and mental reactions are absent; instead he shows miraculous but unhumanlike vigor of mind and body. It is almost as if he were a reincarnation, or of an unknown race—from another planet we'll say. The oscillograph records of nerve impulses show abnormally high voltages and current; the ganglia—nerve centers—all seem to be powerfully charged. He is a reservoir of high tension electricity. If I were superstitious I'd say he is possessed of the devils of lightning or the aurora borealis or something like that."

Garrison chuckled. "That wouldn't necessarily be superstition. Look at some of these, Dudley." He handed over a sheaf of clippings.

THEY were from local newspapers in numbers of suburban towns west of the Hudson River. Cowan read headlines only and these at first in mystification, then with growing interest.

"Green Light in Sky, Claims Moon-struck Swain." "Girl Chemist, Apparently Crazy, Compounds Deadly Gas, Flees Dye Works." "Mechanic Disappears From Local Garage, Shouldering Half Ton Lathe." "Farmhand Finds Exploded Shell of Green Metal." "Officer Daly, Overmastered by Culprit Who Escapes, Suspended." "Classroom in Uproar, Star Athlete Vanishes With Stricken Instructor."

After that the surgeon read scraps of the various texts while the scientist watched his excitement grow.

"Why," exclaimed Cowan finally, "there's a similarity in all of these items. Excepting those regarding the green light and the shell. Cases somewhat like Stone's, a few of these."

"Exactly." Garrison's long, spatulate fingers toyed nervously with a small slide-rule. "And it's my belief that the green light and the shell are all-important in the matter."

Cowan stared. "But this has the appearance of an epidemic of some sort. How could a natural phenomenon—"

"Epidemics are spread in peculiar ways, Dudley."

"You—you mean to imply that an enemy may have let loose some disease germs on us? By firing a shell from a distance?"

"Not that necessarily. Something infinitely more complex. I've done some telephoning, Dudley—followed up some of these reports—and I'm sure of one thing. This is no disease as we ordinarily think of disease. An outside influence has entered into and taken possession of these people, a malign power or intelligence. There are other cases not yet reported and there'll be more yet, is my

idea. Who or what is responsible, I'm not yet prepared to say."

"Radio perhaps?" ventured the surgeon.

"No-o, I think not, but there is something of an electrical nature, as you have already surmised. Here, take a look at this." The scientist displayed a circular chart of the sort used on clock-driven recording instruments.

"What is it, a temperature record?"

"No, it's a record of the static atmosphere charge. Notice how the continuous red line of the pen broke and ran off the chart a little after midnight last night?"

"I do. And that—"

"That was at the precise time a number of people saw, or thought they saw, a green light in the sky."

The surgeon blinked rapidly. "Bret, you can't believe that a meteorite or some electrically charged celestial body may have been the carrier of this thing!"

Garrison rose and paced the floor with long jerky strides, the fringe of light hair around his bald dome seeming to bristle. "By George, Dudley, I don't know what I believe. But think it over: a green something flashes across the sky just when my indicator shows a tremendous increase in the normal static charge of the atmosphere. That was last night. Early to-day a farmer finds an empty metallic container in a field which is roughly in the center of an area where people have been stricken all through the day with this unprecedented affliction. That container must have held something of enormous electrical potentiality. And from what you tell me, as well as from some of the other reports, it is obvious that the victims of what you call a malady are in some manner affected electrically. Figure it out for yourself."

"I couldn't even figure out Stone's case; that's why I came to you. Will

you stop at the hospital with me and look the patient over?"

"Not yet; later. First I want to get over into Jersey and have a squint at that shell of green metal. I—"

The scientist broke off short, peering anxiously at his visitor. Cowan's usually florid countenance had gone suddenly livid and he was seemingly jerked forward in his chair by an unseen force.

"Sa-ay!" Garrison lurched in his friend's direction as the man's hands came up swiftly and mechanically as piston rods. "You too, Doc; has it got you?"

The surgeon made no reply but clutched at the air desperately as the pupils of his eyes dilated and greenish blotches spread over his cheeks. His face drew into an expression of unutterable loathing.

A queer rustling was in the air of the room; Garrison felt it rather than heard it. And instantly there was telegraphed to his brain a flash of sheer hatred of himself so intense that it chilled his marrow. When Cowan's rigid body snapped upward toward him, he knew exactly what to do. His long right arm shot out and there was a sharp crack as his fist reached the point of his friend's jaw. The surgeon's head flicked back and he slumped limply in the chair.

"Sorry to do it, old man," muttered the scientist. "But it had to be done."

Swiftly then, and unmindful of the crackling sparks that leaped between them, he gathered Cowan in his arms and hustled him into the electronics laboratory at the rear of the floor.

HERE was an amazingly intricate assemblage of mechanisms and an array of control apparatus whose buttons and levers and relays covered an entire wall of the large room. The whole comprised the most modern and complete laboratory for electronic re-

search in the United States. There was equipment both for the generation and detection of radiation in wave-lengths from less than one one-hundredth of an Angstrom unit to several miles. Garrison heaved the surgeon's limp form to the table of the electric eye apparatus used for the measurement of the invisible portion of the electromagnetic spectrum.

He quickly found that the most powerful center of radiation was at a point directly between Cowan's shoulders, whereupon he turned the unconscious man face-down. There were several frequencies emanating from this center and these were superimposed, one upon the other, in so complex a manner as to make accurate determination of values a long and difficult process. Perhaps he could render the source of radiation visible. This might possibly be accomplished by superimposing still another frequency on the others so as to heterodyne at least one of them and produce a "beat note" wave length in the visible range.

Acting on the thought, he bathed the recumbent form with invisible rays of ultra-violet frequency, running slowly the gamut of wave-lengths from one hundred and thirty-six to four thousand Angstrom units. A violent twitching of Cowan's muscles speeded his own movements. He thought of the reported green light and mixed lower frequencies with his ultra-violet, until a faint blue haze surrounded the table. The blue lightened and merged into a barely visible green.

Then he saw the thing, a milkily opalescent, spheroid, the size of a cantaloupe, affixed to his friend's back. A quivering mass of jelly-like substance, which shrank rapidly in size as he watched. It was absorbing into the body of the twitching man on the table, entering into it and becoming an integral, living part of one of the keenest and clever-

est medical men in the country. A parasite growth of some sort, invisible to the eye under normal conditions, and somehow electrically constituted. It was a new and unknown form of life from a mysterious source, a malign intelligence, functioning electrically or electrochemically and making a host of a human body, whose mental and muscular activities it was thenceforth to control.

Not if Garrison could prevent it! He saw the thing vanish from sight, even under the radiation which made it visible. It had taken up its new abode. Cowan stirred jerkily and groaned, then lapsed once more into moveless silence. The scientist scurried into his library, where he first rang for the housekeeper, then clutched wildly for his private visiphone instrument.

The vision disc glowed and an operator's voice intoned the time-worn "number please" just as Mrs. Tara, his housekeeper, thrust a white face through the portières.

"Put me through to the superintendent of Park Medical Center," he told the operator, "Emergency." Then to Mrs. Tara: "Get Wayne Gordon immediately. Tell him to lose no time in getting to me."

"Yis, yis." Mrs. Tara, her eyes like saucers and her pasty jowls quivering, bustled off to the lower regions. It had been many a day since she had seen the master in such a ferment.

An impatient voice was issuing from the amplifier of the visiphone, and a haughty, mustachioed visage materialized in its disc.

"You the superintendent of Park Medical?" asked Garrison.

"I am. Townsend is the name, if you please."

The scientist launched forth into a vivid account of what had occurred, but was interrupted by the haughty one:

"You will have to bring the patient to the receiving ward in the usual manner."

"Dog-gone!" gasped the scientist. Then, his ire rising, he bellowed: "Listen to me, Townsend, or whoever you are. You'll get an ambulance with nurses and doctors over here in five minutes, if I have to get half of the police in New York—a riot squad. This is a matter of life and death, or worse—do you understand? Not only for your own Doctor Cowan, but for perhaps hundreds of other unfortunates. Do I make myself clear?"

"Y-yes sir. I'll do as you ask." The face vanished from view and Garrison switched off his instrument.

A few seconds later he was back in the laboratory, securely binding the nearly aroused surgeon. He hated to do it but was taking no chances.

CHAPTER III

MRS. TARA'S awestruck tones and veiled hints of ominous happenings had no more effect on Wayne Gordon, when she called him, than had the appalled solemnity of her countenance as pictured in the vision disc. He knew she was an alarmist, knew her superstitious nature. Besides, he was accustomed to Bret's ways and was never surprised by a hurry-up call from him by day or night, whether it came from his own laboratory or from a jungle in some far-off corner of the globe. However, as was his custom in all such cases, he lost no time now in getting started, leaving his hotel in such haste as to rouse the lobby loungers from their lethargy with his display of energy.

It was not far from the hotel to the brownstone front which Bret maintained so stubbornly against the encroachments in the neighborhood of the more mod-

ern chromium-faced metal structures. Gordon walked, or rather it should be said he loped with the ease and swiftness of a James Fenimore Cooper scout. When he came to Garrison's block he saw an ambulance and a curious crowd in front of his friend's house. He quickened his pace, elbowing his way through the knot of bystanders just as the ambulance clanged away.

Scuttling headlong up the steps, he collided with Garrison, who was on his way down them, dressed for the street. They clung to each other a moment to preserve balance.

"Well, that's that," said Gordon. "I thought it was you they were carting away. Whew!"

"Not me—yet. What kept you so long?"

"Long! I did the last hundred yards in nothing flat, after seeing the mob out here. What's up? Where do we go from here?"

Garrison told him briefly about Cowan and Stone, gripping his arm as he steered him through the gaping crowd. "And now," he wound up, "we're going to Jersey to investigate."

"Jersey! Investigate what?"

"It started there. Tell you more about it on the way. Taxi!" Garrison waved his long arms as he shouted the last, and a cab pulled up to the curb with screeching brakes. "Aero tower, Seventy-Second and Broadway," he instructed the driver, then shoved Gordon in ahead and slipped into the seat at his side.

"Come on, Bret, tell me the rest of it," begged Gordon. "I'll sell my shoes to know what all is in your mind."

For answer the scientist switched on the newscast receiver in the cab. A voice blared:—"for which reason it is suspected that some form of an epidemic is responsible. State police in New Jersey are investigating the report that a group of the victims have stormed and captured

the airline beacon station near Greenwood Lake. The station is equipped with a complete machine shop and laboratory, as well as with sleeping quarters and commissary. Nevertheless it is said that some of the victims carried with them supplies of various sorts, including certain bulky machinery. This, if nothing else, convinces officials of their insanity. The governor himself—"

Garrison switched off the receiver as their taxicab came to a stop in the aero tower court. "It's bad, sure enough," he mumbled. "Worse than I thought."

"You mean to say *that* has something to do with these electrical parasites of yours?" demanded Gordon.

"It sure has," the scientist replied jerkily. "And with what they say is a meteorite."

"Meteorite!"

"Mm-m." Garrison compressed his lips, staring off into space, then hurriedly paid off their driver and darted to the lift, which was about to rise to the landing stage overhead.

Gordon knew only too well the signs betokening his friend's preoccupation. He kept close at his heels but said nothing more. He had not heard of any meteorite, nor could he imagine what Bret was driving at. Although much confused by what he had heard and consequently bursting with curiosity, he refrained from questioning him further. Bret, he knew, would open up in his own good time.

THE little helicopter cab they hired whisked them quickly across the Hudson River and in no time at all they were over what Gordon always referred to as the "wilds" of Jersey. Bret seemed to know where he wanted to go and directed the pilot, then relapsed once more into his brown study. Gordon peered thoughtfully at the careening landscape below.

They first landed in a field where there was a deep circular pit which appeared to have been freshly made. A number of men and boys lounged at its rim. One of the men, a toothless old fellow in overalls, demanded a dime from each of them for the privilege of viewing the pit. Gordon knew then that this was where the meteorite was supposed to have fallen, but the full significance of the thought did not strike him until he saw the scientist descend into the crater and chip off a fragment of metal from a broken shell of greenish color.

"Ha!" he commented. "You think these parasites landed here."

"Don't tell anybody," said his friend drily.

Gordon knew better than to resent this or to press the point.

Back in the aircab, Garrison told the pilot to take them to the Greenwood Lake beacon station, then turned to the visiphone with which the tiny craft was equipped. He asked for the wave band of the Police Commissioner in New York City.

As soon as the square-jawed visage of Commissioner Gill appeared in the viewing disc the scientist loosed his speech. "Tony," he said, "I'm working on this so-called epidemic you've been hearing about. You know—cases similar to those of Clary Stone and Doc Cowan. I'm in New Jersey on the trail of the thing and I want your help. You have some friends over here, haven't you?"

Anthony Gill's eyes twinkled under his bristling gray brows. "I do have friends, sure. And I'm glad you're interested in this. Want me to have them make you a deputy sheriff?"

"Not on your life. I've told you many a time I'd not be mixed up in any police matters. But I want to be sure I'll have a free hand to do some

investigating on my own. What can you do?"

"Plenty, my boy. I'll get hold of Trenton pronto and tell them to fix things for you. The boys over there'll do it, or they'll get no more favors over here."

"Great stuff, Tony; I knew I could count on you. So long."

"Hey—wait a minute. Tell me what you think about this. It's getting to be front page stuff and then some. I got a teletype—"

Garrison chuckled. "Not now; tell you later. But don't you forget to fix me up." He broke the connection and began unburdening his mind to Gordon.

The younger man leaned back in his seat and listened contentedly. This had been worth waiting for

ARRIVING over the beacon station, they saw that it was surrounded by State Police. The station itself comprised a group of buildings and four tall towers enclosed by a large clearing in the scrub woods that topped a hill overlooking the lake. The police had taken up regularly spaced picket posts in the fringe of underbrush where there was some measure of protective cover. Fortunately, only one road led up from the state highway below, so it had been a simple matter to close the place off from the curious who might otherwise have overrun it and complicated the situation.

The aircab dropped toward the clearing and was at once challenged by the blasting amplifiers of the police. While the pilot brought his craft to a stop in mid-air and let it hover with only the vertical prop revolving, Garrison scribbled a note which he enclosed in one of the weighted message tubes and dropped it from the cab.

A blue-coated officer picked it up and read it, then looked aloft and waved

his arms while the amplifiers roared:

"Okay, Mr. Garrison. We've had word from Trenton to expect you. Just set your cab down in the brush back here."

"That's what comes of having friends," exulted Gordon.

A moment later they were greeted by Captain Riley, the leathery-skinned veteran in command of the detail and Lieutenant Martin, the smiling young officer who had picked up Bret's message. Gordon and Martin became friends on the spot.

In the brush nearby was a dilapidated old shack in which Riley had set up temporary headquarters. In it were rude benches and a table on which reposed two portable instruments, a visiphone and a radio teletype.

"It's the best I can offer you," Riley apologized when he had led them inside. "But have a seat. I've heard of you, Garrison, and am glad of your help."

"Thanks. What's the latest dope?"

The captain fished a length of teletype tape from the basket into which it was reeling and read it gloomily.

"They're talking about mobilizing the National Guard," he grumbled. "Citizens' committees from some of these little burgs around—confound 'em—keep on pestering the governor. As if we couldn't handle the situation!"

"Let me get oriented now, will you, Captain?" asked Garrison. "Do I understand that there have been no further reports of cases since this gang collected here?"

"Not a report. Apparently they all got together and organized this raid. About thirty of 'em, as near as we can tell."

"And you've tried to rush the place—to arrest them?"

"Twice. Beaten back each time by

queer light flashes that paralyzed eight troopers."

"Paralyzed them?"

"Oh, it wore off after a bit. But it was bad enough to teach us caution."

"What do you plan now, Captain?"

"Why, I figure to wait till dark and try a surprise attack. That only means a wait of an hour or so, then if I can bag this whole bunch I think the trouble 'll be over."

"Mm-m." Garrison's long fingers twisted nervously in his watch chain. "What will be done with them if you do capture them?"

"They'll go to the County Hospital under guard—for observation in the psychopathic ward. I think they've all been bitten by some bug or something that drove 'em nuts."

"Mm-m. What about those light flashes—what were they like?"

"Like bolts of lightning, only green. They spanged out of the windows in forked streaks. Cracked like all get-out. And left a smell behind 'em like—oh, like a wind off the ocean."

"Ozone?"

"What's that? You—"

The shrill call of the visiphone broke in and the captain flipped the switch to receiving position.

"New York calling Bret Garrison," droned the operator's voice. "New York calling—"

"I'm Garrison." The scientist stepped to the vision disc. "Put them on."

THE call was from Commissioner Gill. No twinkle was in his eye when his features materialized in the disc; instead his facial muscles were set in grim lines.

"It's about Cowan and Stone," he told Garrison. "They've gotten loose."

"Escaped! From straight-jackets?"

"Yeah, and they tore the bars off their cell windows as if they were paste-

board. Worst of it is my men lost track of them after that. They're loose, I tell you."

Gordon whistled softly. What manner of freaks were these with which society had to deal? He stole a glance at Riley and Martin, saw them exchange perplexed stares.

"Dog-gone, Tony!" Garrison was saying "That's a bad break. I intended to experiment on those two."

"Haven't you learned anything in Jersey?"

"Not yet, Tony. But I'm getting an idea. Sa-ay!—I *have* got one at that. Call you in half an hour." Breaking the connection and turning on his heel, the scientist became a whirlwind of energy.

"I'm going back to New York," he said. "Be here again soon. You stay on the job, Gordon. So long."

With the last words his long legs had carried him out of the door. Gordon and the two officers followed him into the twilight. He had kept the helicopter cab waiting; now he flung himself into it, yelling instructions to the pilot. The motor coughed and roared; the tiny craft leaped vertically into the air and soon was a dwindling speck in the gray of the eastern sky.

"Well," grunted Gordon, "that's that."

CHAPTER IV

CAPTAIN RILEY felt better after his next visiphone conversation with Trenton. A check-up had been made of the district and it was now certain that there were no additional victims of the supposed malady. Representations by the State Health Department had minimized the seriousness of the matter and officialdom was inclined to treat it more lightly. Riley's plan to recapture the beacon station under cover of darkness met

with official approval. He was assured that the thing was to be left in his hands unless there were other developments, that the mobilizing of a National Guard unit was being instituted but only for effect, that it probably would not be completed.

Meanwhile, in opposition to those who were asking for gubernatorial action, friends and relatives of victims were besieging their local police and health departments and newspapers, demanding protection for the unfortunates who had taken possession of the beacon station. The local authorities were at a loss as to what action they should or could take, if any.

Public interest was being aroused in New York. Enterprising reporters had ferreted out the details of the cases of Doctor Cowan and the pilot Clary Stone and, in some instances, had coupled these with the events of the day in northern New Jersey. The news was no longer relegated to the inner pages of the newspapers; it was, as Commissioner Gill had told Garrison, "front page" stuff and was the principal subject of the newscast flashes. Speculation among the feature writers on the dailies and the newscasters was unrestrainedly wild. Not one of them seemed to have any definite information as to the possible causes; not one of them connected it with the phenomenon of the preceding night.

Gordon, listening to the visiphone with Martin and Riley, decided to keep his mouth shut about the meteorite. Although Bret had not told him so, he felt sure that the scientist's trip back to New York had something to do with the fragment of green metal. Bret probably had other ideas, too, but—well, it was better not to talk.

"Funny what became of Stone and Cowan," Martin commented after one of the newscast flashes.

Captain Riley, standing in the door of the shack, snorted: "Not a bit funnier than what happened to some of the victims over here. Why, that guy Stull, they tell me, tore a thousand pound lathe up by the roots and walked away with it. Kyle, his boss, said it was bolted to the concrete with half-inch bolts, too."

"What became of the lathe?" asked Gordon.

"He brought it up here and dumped it in the yard when he found one already in the machine shop. Carried it eighteen miles on foot, too."

Gordon whistled. "It sure makes Samsons of them. And, come to think of it, it's darn funny how they all got together from their different localities and marched on this place. But I suppose that's—" He hesitated, considering it inadvisable now to talk about the apparent electrical nature of the queer attacks.

"You suppose what?" demanded Riley.

"Oh, I don't know. It's peculiar, though. And, say, what did they do to the regular attendants at the station here?"

"Paralyzed 'em," grated Riley. "With their light flashes or with a gas. Then dumped 'em in the yard. Five of 'em; they're all in the hospital now down below. Paralyzed more permanently than my troopers were, but they're recovering, too."

Gordon cleared his throat. He wanted to change the subject; somehow he felt he was treading on dangerous ground. Besides, he loved to recount exploits of his checkered career, and Martin would probably listen where those who knew him better usually shut him off. "Now in Bagdad, when I was there with Bret—" he began.

"Be quiet a minute," Riley warned from the doorway. "I heard something."

It was nearly dark outside now and the buildings of the beacon station were mere black blobs against the faint light remaining in the sky. There were no lights visible in them, nor were the great circling beams of the huge towers sweeping the heavens as they had each night of the seven years the station had been in operation. The teletype had told those in the shack that the radio beacon itself had ceased functioning hours earlier and that regular air traffic was being diverted over the Newark-Mineola skylane. To all intents and purposes the Greenwood Lake station was deserted. But Riley had heard something.

The sound came again—a gurgling, maniacal cry. It swelled to a triumphant shout and was followed by the agonized yell of a trooper. Gordon was hard on the heels of the two officers as they dashed out into the deepening night.

“GET them! Get them!” a trooper’s voice was clamoring. “Two of them—new ones—running to the station.”

“Cowan and Stone, sure as you’re born,” muttered Gordon, trotting at Martin’s side toward the voice. He strained his eyes in the effort to pierce the gloom, but could see no moving figures in the clearing.

Captain Riley cursed vividly ahead of them. They almost fell over him where he had crouched over a prone trooper. “Paralyzed like the others,” he growled, springing to his feet. “I’m getting sick of this. Go get a squad together, Martin, and break inside—now. It’s dark enough.”

“Yes, sir.”

“I’ll go with you, Martin,” Gordon offered.

“Attaboy,” approved the lieutenant. “We’ll get ten troopers and sneak in on them from behind.”

Captain Riley was grunting as he hoisted the stricken trooper to his shoulders. “I’ll get him to the shack and call the ambulance from below. Snap into it, Martin—don’t wait for me.”

“Yes sir.”

Gordon withheld comment as he went off into the brush with Martin, although he had serious doubts as to the feasibility of the thing they planned. These cops were an unimaginative lot. They had seen this paralyzing energy and its effects; they knew that the ones who had taken possession of the beacon station were creatures unaccountably provided with superhuman strength and cunning; they had been ordered to capture them without shooting. And yet they hoped to overpower them in their own fortress with a dozen men attacking.

Thinking of some of the details Garrison had mentioned to him, he marveled that neither Riley nor Martin had displayed curiosity as to the possibly scientific explanation of what they thought was an unknown malady. Certainly it must seem to them to be more than a mere physical ailment; they had themselves observed demonstrations of an electrical nature. And the mere fact that the victims, probably previously strangers to one another, had gathered together from a number of towns miles apart, should have warned them of—well, of something.

For himself he determined to work independently once they were inside the station. He was under no orders and could learn more which might later be of value to Bret, if he did some private scouting.

He could not help admiring the courage and brawn of the troopers rounded up by Martin.

“Remember,” the lieutenant was whispering as they crawled through

the brush to the clearing, "get them alive. No shooting. If they put up too much fight, a tap on the coco with a pistol butt will do the trick. But not too hard, now. These are sick people, not crooks."

In view of what had happened before, it all seemed so inadequate that Gordon was sorely tempted to speak up. But he held his peace, though it cost him an effort. He wondered when Bret would return.

They were creeping across the clear space in back of the station laboratory now, and Gordon thrilled as the sound of humming machinery came to his ears. Some of them were inside, that was certain, but what in the name of common sense were they doing? There was no sign of a light.

Martin, crawling beside him, halted suddenly and whispered a husky warning to the others.

Gordon saw why, and the short hairs at the back of his neck rose with the shiver that ran up his spine. Eyes!—green eyes gleaming in the dark. Three pairs of them. Instantly he realized that the victims of the electrical parasites could see in the dark.

Simultaneously with this terrifying knowledge came the crackling green flashes. Martin groaned and lay still beside him. Gordon, as a searing agony drove into his left shoulder, flipped swiftly over and rolled to where the corner of the building hid the green eyes from him. There were yelps from the troopers, other crackling bolts of green, then all was still.

Gordon lay perfectly quiet, although biting his tongue with the pain of his shoulder, hoping devoutly that the green eyes would not search him out in his hiding place.

AFTER what seemed endless hours, he dragged himself over toward

Martin. The green eyes were gone. Martin could barely whisper; he was almost completely paralyzed. The rest of the squad was in like condition.

"Can you stick it out a while?" Gordon breathed in the lieutenant's ear. "I'm going inside, or I'll get a look through a window, to see what's doing in there. They only got my arm."

Martin wheezed painfully: "Sure, go ahead. We'll get over this."

They were game all right, these officers. Gordon wriggled away in the darkness. There was no moon and it was inky dark, but this would stand him in little stead with men who could see without light. He would have to trust to his luck to escape observation.

The door to the laboratory was open. Through it came the sound of voices and the purr of machines, but no light. Yes, there *was* a hardly definable, green glow from a corner of the workshop, a sort of phosphorescence or a radiation like that of certain radium compounds used on illuminated dials of clocks and watches. It was blotted out frequently by the passing of dark forms, spectral shapes that moved with catlike tread.

No green eyes being turned in his direction, Gordon pulled himself over the sill. Near the door his exploring fingers contacted the side of a large cabinet. He explored further, found that the cabinet was a tool rack with sufficient room under its bottom shelf for his concealment. He crawled inside. There was a jointed slide, like that of a roll-top desk. He pulled this shut, leaving only a narrow slit through which he could peer. For a while at least he would be safe here.

A woman's voice—unnatural, mechanical—forced itself upon his attention. "Our initial staff is complete, now," it said, "with the medical man from the big city and the birdman who came with him."

"Yes, Ann," a gruff masculine voice replied. "Very soon now we shall be ready with the first of the new brood; they are approaching adolescence."

Gordon's eyes were accustoming themselves to the eerie green half-light. He could see that it originated in a transparent, rectangular tank which was set in the far corner of the room. In the tank were curious objects, small globules of quivering material that moved about as if they might be some form of marine life in their native element. It was from these objects that the green glow emanated.

THE truth smote him devastatingly. These were more of the ghastly parasites, being incubated and made ready for whatever devilry might be planned by the first of their breed. Hundreds of them! What had already happened was the merest beginning.

A woman's form moved across his field of vision and was silhouetted against the green glow. Gordon, always impressionable where women were concerned, observed that the form was slim and youthful. True, the hair was disheveled, but the profile he saw for a moment in sharp outline was of classic line. He did not know that this was Ann Pelton, nor could he know of the shock, that would have been his, if he saw her in white light. She dipped down into the tank with a long-handled ladle and when she had withdrawn it two male forms joined her, the heads of all three bending over what was in the ladle.

"This one," she said, "is nearing full development. Yours shall be the honor of conveying it to the master for his decision, Peter Marsland."

"Thank you—priestess," one of the males intoned awedly.

The ladle changed hands and one of the men was coming toward the door. Gordon, seeing the green gleam

of the eyes, shrank further into his place of concealment. Then the bearer of the ladle was gone.

"I—I don't understand, Ann," the other male was saying. "He—he called you priestess. You and I are not—"

"Sh-h! You forget yourself, Eric Stull. You among us all are the only one whose old individuality crops out occasionally. Forget everything, Eric, save that we must serve our controls. No more do we have lives of our own; we live for the common good of the controls." The girl's voice was monotonous as that of a visiphone central office operator; her words were clipped and precise, obviously not spoken of her own volition.

"I—I know. My arms and legs—everything—move and do things the control demands, but my thoughts are all mixed up. Sometimes I'm myself; sometimes I'm someone else. But I know what I must do and I'll do it. I have got to, that's all."

Gordon's heart leaped. Here was one of them whose control lost its power at times. This Eric Stull—he would have to tell Bret—if only they could get him away from the others, they might learn the entire secret and know how to proceed.

The girl's voice was droning somewhat after the fashion of a hypnotist's subject. "—think of the benefits to the master and his followers. Of the benefits to our former fellows of this world. The master and his followers, bereft of their far-away home, will have established a new home. And when their millions shall have been absorbed into the bodies of our fellows, think of the added scientific knowledge that will accrue to our old race. Think of—"

With a deafening clatter, the jointed slide, Gordon had pulled shut, snapped open, exposing him to eyes that could see in the dark. Four green orbs

stared in his direction. There was a prolonged flash of green light. Nameless agony. Blackness.

CHAPTER V

MORE than twelve light years distant from earth, a world had died. Its sun was the star known to terrestrial astronomers as OA(N.)17,415, and the world now dead had been for many centuries the only planet in its system inhabited by intelligent beings. These beings, similar to the humans of earth, had long ago progressed intellectually to heights as yet undreamed of by terrestrial thinkers. In scientific achievement and in the correlation of science and economics they had reached an Utopian stage of existence when the discovery was made that they had not long to live in their native environment. A cosmic cloud, which their system was swiftly approaching, was inevitably to rob them of the air they breathed and the water without which life, as they knew it, could not be sustained. Their physicists and astronomers went to work on the problem. The masses fell into swift decadence.

Self-preservation is the first law of nature, and the strongest instinct of a living creature centers in the perpetuation of its kind. So it was with the luckless inhabitants of Zor, the world that must die. Time was short and the scientists quickly decided that it was an impossibility to save the race in its present form. The physical identities must perforce be sacrificed; only the mental identities were susceptible of preservation. To this end the scientists created an entirely new form of life, purely electrical in nature, and a new means of reproduction.

By now the cosmic cloud was so near that it had blotted out the light

of their sun. They worked by artificial light, and later, when all reserves of power were needed for concentration on the synthesis of the new electrical organisms; they worked in darkness. Thirty-four of the organisms were produced and into these were transferred the mental identities and the knowledge of an equal number of Zorians who were chosen for their superior wisdom. Izon, supreme ruler of the planet, was one of the thirty-four. A new science came into being, the science of electro-genetics. Utilizing its principles, all of the remaining inhabitants of Zor were subjected to a process in which they ceased to exist as physical beings, becoming instead microscopic energy charges which later would provide the germs for the reproduction of their mental identities in another environment. These minute embryos, twelve hundred million of them, were carefully enclosed in a tiny force-sphere which could be carried across the void of space with the thirty-four master organisms.

Meanwhile, before giving up their own physical forms, the master astronomers had chosen the earth as the most suitable home for the Zorian civilization. Their powerful instruments had shown them that conditions were ideal on this planet, that its population was of form similar to their own. They could merge the two civilizations.

The scientists had constructed a shell of a special metal alloy, which was capable of being hurled across the space between the two planets by a force beam whose generator and projector were to be automatically controlled so that it must of necessity find its mark. All was in readiness when the cosmic cloud finally enveloped Zor, absorbing the oxygen from its atmosphere and drying up its seas and streams. The metal ovoid sped earthward, bearing its freight of concen-

trated life and universal knowledge.

Zor had died, but the vast stores of its accumulated learning had not died with it. The mortal flesh of its peoples had gone the way of all flesh, but individual mentalities lived on or would be restored to active living when the time came. The scientists had neglected to consider, perhaps by design, the human qualities of the mind—love, compassion, reverence, sympathy, the capacity of happiness. The mental identities were not lost, but many human attributes had died with the mortal flesh. The identities would better have died as well.

Only two of the thirty-four master organisms were exceptions. Scientific accomplishment involves occasional variation in result, which variation is considered as proof of the general rule. Machines of duplicate design and construction frequently perform differently when completed. So it was with the two exceptions among the organisms. The first of these had been Oa, daughter of Izon, whose disposition was most loving and compassionate. These qualities were left to the mental identity entering the organism. The second exception was in the case of Throg, formerly the youngest and most brilliant of the Royal Academicians. He, too, was left with the capacity for loving. Coldly scientific now, all of the mental identities except these two, and unknowing of what they had lost, they communed on profound subjects, while the vehicle they had devised hurtled on through interstellar space toward its destination. Their exchange of thoughts was effected through the medium of energy radiations, only the two organisms which had been Oa and Throg seeming disinterested. For many terrestrial years they traveled thus, their journey ending with the earthly phenomenon of August fifth, 1955.

When they landed, none of the others knew of the differences which distinguished the two exceptional organisms in their midst.

IZON, their master, had taken possession of the mind and body of the young man known to his classmates as Red Riddell, reasoning that a physically superior body and a slow-witted mind formed a combination ideal for his purpose. Oa entered into the person of Ann Pelton, while Throg had chosen Peter Marsland.

During the process of choosing and taking possession of thirty-four residents of the new world, only one of the organisms from Zor met with any difficulty and that was not immediately apparent. This was the organism now a parasitic visitant of Eric Stull. Stull, once at death's door on account of a fractured skull, had a silver plate in his head, and this somehow interfered with the electrochemical reactions between host and parasite.

In fact, all of the thirty-four organisms were encountering certain unanticipated stumbling blocks to the ultimate perfection of the relation between themselves and the earthlings they had adopted as hosts.

The beings they now inhabited had healthy bodies, and a healthy body is provided with tremendous resistance against disease or other internal disturbance. The human brain is complex in the extreme and, besides being flexible in its adaptability to new thinking processes, is a reservoir of hidden potentialities which are sometimes associated with the subconscious mental reactions. The nervous system of man is in reality an intricate telegraph system, functioning electrically to convey impulses to and from the brain, which is the seat of physical action and vigor, indeed of life itself. Certainly the electrical potential-

ities of the human system are feeble indeed in comparison with the powerful currents set up by the parasite organisms; nevertheless they were proving to be a problem to the intruding entities.

The Zorian intruders were easily able to produce superhuman feats of their hosts, both mentally and physically, but in so doing found it necessary to release excessive amounts of energy. The human bodies functioned as they would in combatting the germs of a disease, swiftly increasing heart action and developing abnormal body temperature. As a result, extreme fatigue followed quickly upon the performance of the superhuman labors demanded of them by the parasites. Even now, Stone and Cowan were lying exhausted in a room in the beacon station, their brains stupefied and inactive. Their parasite controls, cognizant of the dangers of permitting their hosts to use up too much of their natural bodily strength, wisely remained dormant, neutralizing their own tremendous electrical energy charges.

Then, too, there were unexpected difficulties in exploring and obtaining control of the brains of the earthling hosts. At times when a threadlike, searching attenuation of the parasitic organism would contact a deep-seated group of brain cells, startling results in the mental reaction of the host were produced, results quite contrary to what was desired by the control entity. This was when a seat of human emotion was reached, since the functioning of such regions was beyond the comprehension of mental identities which had been robbed of the particular human attributes centering in these regions. Izon, discovering this some hours previously, had warned his subjects to exercise extreme caution in this respect, his warning being given through the medium of thought emanations radiated with such intensity from the brain of Red Riddell as to lay that

young husky low, for the better part of the afternoon.

Perfection of the relation with their otherwise satisfactory hosts must needs be attained slowly, Izon and his scientist subjects decided.

THE electrogenesis of Zorian identities was proceeding at an excellent rate in the laboratory of the beacon station. No location more ideal could have been found by the thirty-four for their work, as almost everything needful was available to them here after a few of their number, including the Oa-Ann Pelton combination, had provided the required chemical ingredients.

Izon, in the person of Red Riddell, sat in the darkness of the beacon station assembly hall when Marsland brought the first of the newly developed organisms for his inspection. He had been discussing with his scientists this phenomenon of seeing in the dark through the eyes of their earthly hosts. There was a question of radioactivity that was to be investigated; the daylight of this world had become unendurable for the eyes, ordinarily accustomed to it, a remedy would have to be found. The controls must have the use of normal sight.

"What have you to report, Throger, Marsland?" came from the lips of young Riddell in a curious measured basso.

The ex-teacher extended the ladle. "Here is the first of the organisms to display motility and irritability. The priestess asks how much longer the activating current is required in the bath."

"Priestess!" snapped Riddell. "What is this nonsense you speak?"

Marsland stammered: "Sorry, sir. It is my confusion of mind; I seem unable to control it where Ann is concerned."

A powerful mental radiation went out from the organism that was all which

remained of Izon. Young Riddell's body tensed under the strain; perspiration beaded on his forehead. Marsland cringed, became utterly subservient to the master's will.

"See that this—ah, confusion—does not occur again," sternly voiced Riddell. "You may tell Ann Pelton that another terrestrial hour should be sufficient."

"Yes, sir." Marsland backed away with the ladle.

His place was taken by Eric Stull, who had come in from the laboratory. "We have captured one of the prowlers," said Stull. "One who was hiding in the laboratory. He is different from the rest."

"Different?" growled Riddell. "None of them is different. You paralyzed him?"

"Completely." Stull's voice altered, becoming more like that of a normal human being. "I don't get it," he blurted. "Why are we doing this? This guy out there is all right. Why do we—"

"Silence!" thundered Riddell. Another thought emanation of Izon's set him panting. "You—you are not yourself, Stull. Understand? You are to respond fully to your control. This captive will be the first to receive one of the new organisms. Understand?"

"I do." Cowed, again under control, Stull slunk away.

GORDON awoke to the touch of feminine fingers. He was prone on a hard floor; his body tingled painfully from the neck down. He could not move a muscle. Only a faint green light was in evidence; he was still in the laboratory. He could see the dark form of the girl only as a blur. She was kneeling beside him, stroking his cheeks, and as her fingers moved a roseate aura fol-

lowed them, an aura that brought warmth and feeling in its wake.

"What do you say to trying my arms and legs?" he suggested. "Maybe I can move them if you do."

The girl, startled, turned her head. Gordon saw the green gleam of her eyes close to his own. Involuntarily he shuddered.

"Oh, you are awake." It was the voice of Ann Pelton, her own natural voice. She did not know it, but Oa, her control, was in complete sympathy with her actions and was passive within her. That human attribute which remained was at work.

"What do you say?" repeated Gordon.

"I'll try." The voice was softly caressing, the fingers even more so.

Gordon soon found he could raise his arm, the one she had been stroking. He lifted his hand to her face; his fingers contacted skin as smooth as satin, hair that was like finely spun silk.

"Please," said Ann. "Please don't."

But she did not really mean it. For the time she was herself, a free agent, uncontrolled. And this man she had helped to strike down appealed to Ann as no man in her life had appealed to her before. She did not stop to wonder as to her ability to see him here in the darkness; she only knew that she could. She did not think to marvel at the healing that was in her stroking fingers; she only worked them the faster as she remembered that Marsland or Stull, or both of them, would return shortly.

"Who are you?" the man was asking. He sat erect now; in another moment he would be able to walk.

"Ann Pelton," she breathed. "And you?"

Unaccountably thrilled, Gordon told her. "And I must see you again," he added earnestly. "Oh better yet—you

come away with me right now; that's the idea. I—"

"Sh-h! They'll be here. I can't leave now, but you must." Ann helped him to his feet, thrust him away as he tried to draw her to him. "You must, I say"—frantically, as he rebelled. "Go now before it is too late. You don't understand—it is my only hope."

Gordon knew that what she said was true. "But I'll see you again—Ann," he vowed.

"Yes, yes. But go—go far away."

Then he was outside, wriggling his way along the building wall to keep out of range of the green eyes that could see in the dark.

CHAPTER VI

BRET GARRISON'S trip back to New York had to do with more than the fragment of green metal. True, his first act upon re-entering his own laboratory was to attempt an analysis of the sample, but he gave this up when he found it practically impossible to break down the material. He did learn that certain rare elements were present in sufficient amount to make it unlikely that the alloy was of earthly origin.

His next move was to call an official of considerable importance in the national capital. Garrison had many friends, among them people of influence who could and would do much for him. In this case his request brought immediate results; he was granted the use of one of the most modern stratosphere planes of the Meteorological Bureau, a large and powerful sealed-cabin plane equipped with a complete laboratory.

He made arrangements for the transfer of some of his own special equipment to the plane, and when this was done returned to the beacon station at Greenwood Lake.

Captain Riley greeted him without enthusiasm this time. "What do you plan to do?" he almost sneered. "Attack 'em from the air?"

"No," Bret returned shortly. "What are *you* planning?" He had observed that the entire detail of troopers was gathering as if for a mass attack. "Where's Gordon?" he demanded, noting that his friend was not in sight.

"He's up there in the dark, probably lying paralyzed with eleven of my best men. They tried to sneak in and failed. There were some of the green flashes and that's all. I'm getting ready to go after 'em right. There'll be no slip-up this time."

Garrison could not help but marvel, as much at the stupidity of the move as at its audacity. Didn't Riley realize by this time that the defense of the beacon station was impregnable to his antiquated mode of offense? He knew what had happened in daylight, and now had seen that darkness was no protection.

"Why not team up with me," he suggested to the choleric officer, "and go after the thing scientifically? Fight fire with fire, as they say in books."

"Bah! We'll fight 'em with fists and pistol butts. I'm sick of the whole business."

It occurred to Garrison that he'd be sicker before it was over, but he did not say so. Riley left him then without more ado, storming at his men, as he rounded them up for the attack he should have known could not succeed.

Standing at the door of the shack, the scientist looked toward the lighted ports of the stratosphere plane where it was almost hidden in the brush. He wanted to go ahead with what he had intended, but Wayne was still unaccounted for. He hoped nothing, more serious than this temporary paralysis, had overtaken him.

Just then Gordon came running to him from out of the darkness. "Hell's hinges!" he squawked. "This is a mess. There's more to it even than you thought, Bret. There'll be millions of your parasites by morning."

"Millions?" Garrison, relieved at sight of his friend, nevertheless saw that he was more than ordinarily wrought up. Obviously he had learned much. "Come into the shack where we can talk. Riley will be too busy to bother us."

Gordon blurted out the story of what had happened to him and what he had seen and heard, only glossing over the final scene between Ann Pelton and himself. Interested as he was in the amazing news that new parasites were being produced, Garrison could not resist a thrust at his friend. A twinkle came into his eyes when the narrative ended.

"Dog-gone!" he exclaimed admiringly. "Hooked again, so help me! Wayne, when will you learn that girls are bad medicine for you?"

"Not this one. She's wonderful."

"They all are." Garrison was thinking of the green splotches on the skin of Cowan and Stone, of the horrible distortion of their features. Wayne had not seen the girl in daylight. There'd be no sense in discouraging him, though; instead, Bret told him about the stratosphere plane.

"What's the use of that?" demanded Gordon.

"Collect your wits and I'll explain. This ship's good for plenty of stunts besides flying the stratosphere. It's completely equipped for laboratory work along just the lines we need. And, most important of all, its cabin is insulated against cosmic ray penetration, which means against any electrical radiation or organism. We can work inside it undisturbed by the parasites. See?"

"You bet I see." Gordon waxed enthusiastic at once and, as Garrison

had expected, insisted upon seeing the ship's interior immediately.

THE pilot, a phlegmatic government flyer of German extraction, nodded in friendly fashion when presented to Gordon.

"Muller," the scientist directed him, "I'd like to seal the ship now and take off. Only to a point above the beacon station, where you can hover say about a hundred feet up, between the towers."

"Good. We'll see then what goes on."

Gordon marveled at the ease of operation of the sealing shutters no less than at the silence of the muffled Diesel motor and smooth vertical take-off. "She's a marvel," he approved.

"Wait till you see the laboratory," said Garrison. "In here."

Gordon followed him into a sizable cubicle aft, which, to him, was just another place of incomprehensible apparatus and gadgets. Vacuum tubes and condensers, inductances and resistances, were familiar to him from his radio experience, but these ultra-modern assemblages used by Bret made him dizzy when he contemplated their intricacies.

"First off," Garrison was saying, "we'll prepare to have a look at things below."

"You can't light up the grounds, Bret. Searchlights would expose the troopers and spoil their plans."

The scientist, tightening connections on a compact machine with an enormous tube like that of an X-ray, grunted: "Their plan is worthless, anyway. But we won't use searchlights; we'll bathe the scene with infra-red light, and this screen you see will make it all visible to us. Something like a fluoroscope, only it's at the other end of the spectrum from the regular X-rays."

"Like infra-red photography?"

"Somewhat. This apparatus is to

infra-red photography what the fluoroscope is to X-ray photography, except the longer waves do not render objects transparent."

A switch clicked and a small motor-generator in the machine began to purr musically. The tube glowed dully red. On the screen, images formed hazily. Garrison switched off the lights of the room and the images became sharply distinct, in monochrome and queerly unnatural in values. The green of grass and foliage was snowy white, a background against which the buildings of the station stood out in cameo-like relief. They saw Riley and his troopers creeping toward the main building of the station, saw Martin and the first squad sprawled where they had been stricken. Evidently they had received powerful doses of the paralyzing energy.

The plane was hovering as Garrison had directed, its vertical prop alone revolving, and was as vibrationless and silent as if they were on solid ground. Muller, having set the automatic controls, joined them in the laboratory compartment.

The three watched as Riley's men inched forward. When they were within fifty yards of the station, four figures emerged from the main building, one of these a woman. Bret reached across the screen and pressed a control which set another machine humming.

Gordon peered anxiously at the woman, clicked tongue against palate in relief. "No, it's not Ann," he muttered. Immediately he was chagrined at Bret's knowing chuckle.

Then came the flashes of light, white in the screen instead of the accustomed green. They seemed to emanate from the outstretched finger tips of the four who had come out from the building. Again and again they spat forth, always contacting a trooper and bringing him to the earth, where he squirmed for a

moment and then lay still. Riley's men were not quitters; those not brought down by the first volleys rose up to their feet and plunged on in the face of the numbing flashes. Riley himself actually succeeded in reaching one of their tormentors and grappling with him. Then he, too, went down. And he was the last; the entire detail of troopers had been rendered helpless, and the four defenders of the station calmly marched back through the door from which they had emerged so short a time ago. They displayed no elation whatsoever, nor did they pay the slightest attention to the sprawled forms of the troopers. To them the victory had been the most commonplace of incidents.

GARRISON switched on the lights and removed a recording chart from the second machine he had started. It bore wavy lines in red, green, and black ink. "When I've integrated these curves," he exulted, "I'll know the precise nature of this paralyzing energy."

Gordon and Muller conversed in low tones while the scientist was at work on the chart with a planimeter. The pilot was curious, though mildly so, and did not seem greatly astonished by the highly-colored tale so willingly told to him. Being what he was, and in the service he was in, nothing surprised him or disturbed his equanimity.

"So," he commented, when Gordon had finished. "I do not wonder they have killed nobody. They are preserving these bodies intact for their own use, for the millions (did you say) of others they are to release on our peoples. It is indeed a well organized invasion."

Gordon started. He hadn't thought of it in that light before, though it was obviously the truth. "It's about time they started releasing the new ones, too," he recalled. Then, turning to the drawing table where his friend was working—

"Bret, can't you turn on the infra-red machine again? I've a hunch—"

"So have I. Let me get oriented on this and I'll be with you. Only a minute now—there, I have it." Garrison's eyes gleamed with satisfaction; he had made another determination that was to form a link in the chain of evidence. "You're thinking of the new parasites, I take it?"

"Yes."

"Our infra-red won't work on them. They're invisible to any but certain radiations in the green band of wave-lengths."

"I saw them," Gordon objected. "Down there, I saw them."

"Mm-m. And in just the proper light, if you stop to remember."

Gordon subsided. The scientist was working with another apparatus which was likewise provided with a viewing screen. Again came the hum of a motor-generator, then the glow of numerous vacuum tubes of curious construction. The lights flicked off and they were in total darkness.

"Can't see a thing," complained Gordon.

"Wait."

A faint greenish luminescence clothed the screen after a moment; here and there swarms of brighter green flecks were seen moving.

"I'll shorten the focus," muttered Garrison.

The bright green flecks grew larger and resolved into globular masses which drifted about with seeming aimlessness. Then, as the eyes of the watchers became accustomed to the darkness, they could see the recumbent forms of troopers. The parasites were searching among them, choosing their victims. One of the green globules swooped down and attached itself to a figure which struggled and squirmed . . .

"Himmel!" ejaculated Muller, lapsing into the tongue of his forefathers as he

was startled out of his usual stoicism.

Garrison switched on the lights and stared at them, blinking and white-faced.

THEN he had pounced upon another mechanism and was twisting its controls determinedly. "There are loose ends to this," he declared. "Things I can't piece together. I must know more—and quickly. Too bad we can't pierce the roofs down there and see them at their devilish work inside. At least we can hear them, though—if they speak their evil thoughts through the mouths of their victims."

"Ha!—a radio-detectophone." Gordon recognized this instrument. It projected twin beams of invisible energy through solid walls into secret places, converting sound vibrations in an enclosed room into electrical impulses and returning them to operate a loudspeaker located at the source of generation and projection.

Squawks and rattles issued from the cone of the amplifier as Garrison searched the rooms of the main building. At last he found a rumble of voices and tuned it to clarity.

There were distinguishable words of gruff, mechanical speech: "It is begun. The first million of our twelve hundred is on its way. Our plans can not fail, Doctor."

Bret started, straining for the reply. It came, undoubtedly in Cowan's voice, although jerky and unnatural. "Yes, Master. And the officers outside—they are to be provided with controls immediately, so we can utilize them as guards of this place?"

"Yes, all as it has been directed. Even now the missions of my followers are being carried out. By morning we shall have surrounded ourselves with friends instead of enemies. This entire section of the country will be ours."

Footsteps were heard after that; evi-

dently the speakers had left the room into which the twin beams were streaming:

"By George!" rasped Garrison. "Did you get that? Twelve hundred millions," he said. "Why, it's enough to take possession of three-fifths of the population of the entire world. Think of it!—sixty per cent of the world peopled by men and women whose individualities have been entirely lost, whose bodies will be slaves to these ghastly parasites. And they'll choose the cream of our civilization, the healthiest and most intelligent of all lands. Unless we stop them. We've got to stop them. And that means work, sure enough, and tall thinking. Wayne—Muller—help me."

Again the lean scientist became a whirlwind of energy, rolling up his sleeves and snapping out rapid instructions to the other two. All that could be done was to be done here and now.

CHAPTER VII

ELECTROGENESIS of the marauding organisms was continued throughout the night. Each organism, though invisible to human eyes in ordinary light, was carrier of a Zorian mental identity in addition to being a reservoir of tremendous electrical energy of a nature unfamiliar to the science of earth. And these millions now streaming out of the hilltop laboratory included vast numbers whose originally fine qualities of intellect had been debased to a far greater degree than had the intellect of any of the first thirty-four. Consequently, the hordes, now descending to the valley and spreading over the surrounding countryside, constituted an incalculable menace to humanity.

The scientists of Zor had succeeded in the main, but in tampering with nature as they had done, they brought forth a preponderance of abnormal mentalities

which would have deterred them from their experiments had they foreseen this possibility. All unknown to the originators of the scheme or to the unsuspecting victims, these abnormal and subnormal mental entities went out to uproot and subjugate a civilization.

Stripped of the finer human instincts by vagaries of the electrogenetic process and in a majority of cases of the accumulated knowledge of generations, the emerging entities were subject to such intensification of certain of the baser instincts as to become individual psychological problems. They were single-track minds which, when in control of human bodies, were certain to wreak havoc in any family or social relationships which might otherwise have remained or been re-established.

They swept through the lake shore colonies and villages, taking possession of their victims whether asleep or awake. So violent were some of these seizures that death of the stolen mortal frequently was the result, necessitating the withdrawal of the invading organism and the search for a second victim. Sleeping men and women awakened to such mental and physical torture as to drive them to suicide. But the alien organisms lived on, only maintaining their progress until they had found a permanent home in a more easily controlled human.

They worked their way north as far as Middletown, Goshen and Newburgh, south to Paterson and Hackensack, crossed the Hudson to Yonkers and Peekskill, all before midnight. Residents in these localities succeeded in broadcasting the alarm before they were themselves overtaken by their individual controls. The larger cities of the East were aroused to the danger by the garbled and hysterical newscasts as well as by the strident ballyhooing of late extras by newsboys in the street. An invisible enemy was stalking toward

them, overrunning farms, towns, suburban cities, entire counties. And no one came forward with a practical suggestion for combating this enemy.

Finally the unseen invaders reached Newark and New York City itself. Here was work for the remainder of the night, a hunting ground for all of the new organisms capable of absorbing them as fast as they could be released for several hours to come. The police in New York, unable to cope with the rioting crowds in the streets and other public places, were soon victims themselves. Panic-stricken cliff-dwellers of Manhattan hid in closets, in the cellars of their apartment houses, in the fire boxes of furnaces, all to no avail. The invisible organisms sought them out and entered them willy-nilly, shaking them to the foundations of their beings, altering them—horribly.

Frantic, embattled millions stormed the subways, hoping for protection and escape, but disaster overtook them even here. The unseen enemy followed. A Bronx Park Express, passing three stations in succession because the motor-man was suddenly possessed, crashed into the train ahead. In the wreck and in the fire and panic which followed more than a thousand lost their lives. And this was a mere beginning.

The transportation systems, at first merely overloaded, were soon completely disorganized. Highways leading out of the metropolitan area were jammed with automobile, bus and truck traffic. The airplanes were congested with swiftly darting transport planes, private speedsters, and helicopter cabs. The railroads—north-, east-, south-, and west-bound—upset all schedules, and the terminals were quickly emptied of all streamlined trains already in. Further inbound traffic was discontinued.

Some of the fugitives succeeded in getting away from the zone of imme-

diate danger. A great majority of them, however, overtaken before they had well started, became involved in minor and major catastrophes. Wreck after wreck piled up on the highways as drivers of automobiles were overcome at the wheel. Private planes and helicopter cabs running amuck, their pilots suddenly under Zorian control, crashed in midair and hurtled earthward in flames. A two-hundred passenger transport, with every seat filled, was sent into a nose dive by the crazed man at its controls and crashed in the New Jersey meadows. A passenger train on the Erie Railroad, aisles and platforms crowded to capacity, piled up in a twisted, flaming mass of wreckage when the engineer pulled his throttle wide open just before reaching the sharpest curve on his run and then leaped from the cab, screeching and jabbering.

Orders went out from Trenton and Albany for the mobilization of the National Guard in New Jersey and New York, although no official of either state had a clear idea as to how the militia was to cope with an enemy that could not be seen and which fought with weapons of unknown nature against which no defense had been discovered.

Utter chaos was in the making.

ALL of these things and more were known to the occupants of the stratosphere plane which hovered above the Greenwood Lake beacon station, the newscasts and numbers of personal visiphone calls serving to keep them advised and driving them to superhuman efforts in the labors directed by Bret Garrison.

When the first reports came to them of lives actually lost in the surrounding territory, Garrison was desperate. They deluged the beacon station with tear gas bombs, hoping to disable its defenders so that they could land and

put an end to the production of the millions of alien organisms. But powerful discharges of what seemed to be static electricity, arising from the very earth in the clearing, immediately dispersed the gas clouds, and Garrison's searching beams showed him that the defenders were unharmed. Shortly thereafter, multiple bolts of the green lightning struck upward from the station laboratory, contacting the stratosphere plane and almost capsizing it. Fortunately, Garrison's analysis of the green energy had enabled him to provide a neutralizing force in the plane's hull, so no great damage was done. Nevertheless it was deemed necessary to rise to a greater altitude.

Commissioner Gill called later, advising of conditions in New York City and asking for the scientist's advice. Garrison was unable to give him any help and told him so. It was not long until word was received that Gill himself was a victim.

Newscast flashes were increasingly alarming. Garrison, sweating over his apparatus in the laboratory of the skies, groaned anew at each failure of his penetrating rays as he endeavored to neutralize the energies of the controls which were at work in the bodies of so many humans below.

"There is a three-inch rapid-fire rifle in the ship," Muller told him. "We could blow up the station."

The scientist shook his head. "And kill a lot more of our own people, with no assurance that we would destroy the breeding apparatus of the new parasites. No; I'll find another way."

Gordon was relieved; he had almost feared that Bret would listen to the pilot's suggestion.

Later still, Washington called Garrison. He was non-committal in his replies to queries from the Science Research Bureau, but was firm in advising

against the proposed sending of a fleet of army bombing planes to wipe out the Greenwood Lake base of the intruders.

"It would do no good," he insisted. "There are more than a hundred men and women who would lose their lives, including the State Police officers. And these electrical organisms which control them would not be injured. They are practically immortal as far as any ordinary means of destruction is concerned. But I'll find a way of controlling them or wiping them out. Give me time."

His arguments prevailed, at least for the moment. They trusted his judgment, down there in Washington, and besides had learned what happened to the first regiment of militia sent out against the unseen enemy. That regiment, quickly overcome and possessed by the parasite organisms, had set to fighting among themselves for the loot of the town they had been sent to protect. The results were too horrible to contemplate.

While Garrison used every known energy in his searching beams to ferret out the secret of the parasites, Gordon was watching the scene below in the screen of the infra-red apparatus. At last he saw a flurry outside of one of the buildings which betokened something out of the ordinary.

"Bret!" he chirped excitedly. "They're throwing one of their own number out of the station. Look here."

Garrison and Muller joined him at the screen. What he had said was true; a man was being carried across the clearing by two of the others, a man who struggled desperately to free himself from those who held him, but to no avail.

The scientist switched on his sound apparatus and a gruff voice was wafted up to the watchers. "Eric Stull," it snarled, "you are the most unfortunate of mortals. On account of your resistance you must go out into the woods alone to wander and to die. Your control has

been withdrawn and you have been so marked that none will adopt you henceforth. Miserable, ungrateful human, you—"

A normal, perfectly sane, masculine voice cut in: "Aw, go chase yourself. Go to—"

Wayne Gordon whooped joyfully. "Eric Stull! Bret, that's the one I told you wasn't under complete control. They're freeing him. I'd sell my shoes to have a talk with him."

At that moment Stull was being driven into the underbrush by the larger of the two men who had brought him from the station.

"We *will* have that talk with him," said Garrison. "Muller, can you find him in the brush down there, do you think?"

"Ja—gewiss. With your trick lights. We drop down there at once." The pilot darted into his control cubby.

CHAPTER VIII

THEY located Stull in short order and landed almost beside him. He was so enraged by what had happened, that he forgot to be surprised at the advent of the stratosphere plane here in the brushwood, but was quickly cooled off by Garrison's terse statement of conditions and the importance of obtaining his immediate assistance.

"Sure I'll help," he agreed willingly. "Anything to get back at them for what they did to me."

"Good. Then come with us." The scientist led him to the ship.

Once inside, Stull became voluble. They let him talk until they were once more hovering over the beacon station, this time at an altitude of two thousand feet. Then Garrison began questioning him.

"Why do you imagine your control was ineffective?" he asked.

Stull, still considerably dazed by his experience, looked blank. Then a light of comprehension dawned in his eyes. He felt gingerly of a patch on his skull where it was bare of hair. "I get it," he grinned. "When I was busted up a couple of years ago, they put a silver plate in here. It must have grounded the energy of this control, whatever it is, or screened what brain I've got left."

"Dog-gone!" breathed Garrison. "That is it, sure enough. Mind if I examine your head with X-rays and other radiations?"

"Naw—course not. You can't hurt this old campaigner." Stull grinned in friendly fashion; he was glad to be here, to be anywhere excepting with those others down below. He'd had enough.

Garrison continued his questioning as he worked with the searching rays on his new subject. "How did it feel to be under this control?"

"Why, it was the craziest thing—one minute I'd be myself and the next I'd be someone else. I knew those others I was with were in the same fix, only they couldn't bust away from their controls at all, like I could sometimes. The thing inside me could make me do anything it wanted when it come to working with my hands. But I had my own ideas usually."

"Do you recall any of the details of the process they use in producing the new organisms?" Bret was working swiftly with the electric eye apparatus as he talked.

"Not much. It's electro-chemical, the process. I'm a machinist and don't know much about that stuff. But I do remember something about the reversal of electronic orbits, or some such bunk."

"Ah-h! Now we're getting some where." The scientist's long fingers

moved so swiftly at the controls of his apparatus that Stull could not follow their manipulations.

"The dangdest thing about it all," reflected the machinist, "was the seeing in the dark. Everything was in pale green light, even if there wasn't any light."

"But now your sight is normal?"

"Uh-huh. Soon as that thing squirmed out of me I was in the dark. That's why I didn't go back after those birds when they threw me out—I couldn't see them, or I'd have busted their necks."

Garrison removed the plateholder from the X-ray machine he had been working with and retired to the tiny dark-room adjoining the laboratory.

When he had left the room, Gordon ventured a question. "You know the one they call Ann Pelton?"

"Sure, but I'd never seen her before this happened. The one they call Marsland is nuts about her."

Gordon bristled. "Are they old friends?"

"Naw, they just met yesterday, same as the rest of us. And she's trying to get away from him all the time."

This was good news at least. Gordon relaxed and the scar on his cheek lost the purple hue it had suddenly taken on. "Where do you think these controls come from?" he asked, changing the subject.

"Danged if I know." Stull furrowed his brow, then waved an arm skyward. "Seems from some of the talk, like they come from a star or some place like that. I don't know."

Just then Garrison burst in from the darkroom, a dripping plate in his fingers. "We're on the track now," he exulted. "That silver plate of yours, Stull, tells the story. It's partly disintegrated, and I've learned that the controls are constituted of matter unlike any that exists on earth. There are atoms of different

construction, with electrons revolving about the nuclei in the reverse direction to that with which we are familiar. Some particles which should be negatively charged are positive instead. The radio-microscope and the gamma ray track indications show me this and other things. Now I can work with more certainty, sure enough."

Stull's mouth hung open. It was entirely over his head. But he watched with deep interest, as the scientist went back to his labors with the complex machines that were all around them, assisted by the younger man he called Gordon. That is to say he watched for a few minutes; then nature took its toll. Physically and mentally exhausted by what he had been through, the young machinist fell asleep where he sat.

TOWARD morning there came an imperative call from Washington. Garrison answered, this time facing the vision-disc image of Roy Cass, the Secretary of War.

"We can wait for you no longer," Cass told him. "It has been decided definitely to bomb the beacon station at dawn. The air fleet is on its way."

The scientist bowed stiffly. "Nothing I can say will dissuade you?"

"Nothing. These invisible creatures are overrunning the country. Some have even been reported in Philadelphia. They must be stopped at the source.

"Sa-ay!" drawled Garrison. "What do you think I'm doing?"

"I do not question your ability, but you are too slow. Popular demand calls for action and we're going to have it. That is my last word."

"Very well, but you'll fail," Garrison predicted. The visiphone connection was broken then and he turned a haggard face to his friend.

"You—you really think they'll fail?" Gordon asked anxiously.

The scientist shook his head to clear away the cobwebs and then indulged in a broad grin. "Of course they will; they're bound to. You needn't worry about that girl is my idea."

Gordon flushed; Bret had hit the mark again. "What do you say we try the neutro-beam before they get here?" he suggested.

"That's what I intended. Here, help me with these last few connections."

They busied themselves with the machine Garrison had contrived for the purpose of driving the controls out of their victims without harm to the innocent hosts. The scientist had learned much.

Muller came in from his cubby to tell them that the eastern sky was paling with the first faint suggestion of approaching dawn. Stull awakened and leaped to his feet, grimacing and clawing the air.

"Gosh!" he exclaimed, subsiding shamefacedly. "I thought I was still one of them down there. Boy!—am I glad I'm here instead."

"We're glad too," Garrison said sincerely. "We're about to try something, Stull—watch this."

A powerful high-frequency generator whirled into life; numerous vacuum tubes glowed; a trunnion-mounted projector that looked like a small searchlight sang musically to the internal energy with which it was impressed. The scientist swung the projector on its bearings so as to bear in the general direction of the station beneath them.

"LIGHTS off," he ordered.

Muller snapped the switch and they were in darkness, only the dim circle of the infra-red screen being visible.

Garrison's voice came out of the gloom: "I shall try this young athlete first, the one who seems to be leader.

The object is not to kill the parasite organism but to make it impossible for it to retain its place of residence or to take up new residence in a human host. I hope to neutralize completely its ungodly energies with my machines."

In the infra-red viewing screen they saw a pencil of misty light strike down toward the main building of the station.

"This new ray I've developed will enable us to see inside the buildings," explained the scientist. "The neutro-beam will follow. By George, I wish I'd had these machines last night; we'd have prevented a lot of what has happened. But sa-ay!—what's wrong here?"

The misty light-pencil had not reached the building at all but was stopped in midair by an invisible surface against which it splashed in a circle of faint spreading radiance.

"They've blocked it!" squawked Gordon. "They've set up a barrier of radiations of some kind. Now we'll have to do our work all over."

Garrison muttered disgustedly of his own lack of foresight. "I'll try the neutro-beam itself," he grunted. "It may go through."

A switch clicked shut; the whine of the generator rose in pitch. But the neutro-beam squashed helplessly against the new obstruction, as had the tracer ray. It was opaque, now to light, that barrier.

In another moment they heard the roaring motors of the approaching fleet of bombers. Gordon switched on the lights in their laboratory. Muller slipped away into his control cubby once more. Garrison swore in picturesque fashion.

"There was some bunk," Stull recalled, "about the coming of daylight. Their eyes—something about a shield against the sun."

"So that's it." Garrison reached for his slide-rule, began a hasty revision of his calculations.

The visiphone shrilled its call. Gordon answered it. The commander of the bombing squadron was bawling at him: "Clear away from underneath! We are about to commence operations."

He ducked into Muller's cubby where he found the pilot staring at his instruments in disbelief. It was growing light outside.

"Did you hear that?" choked Gordon. "They said to clear away. We're in range of the bombers."

"Himmel—yes, I heard." Muller yanked at his controls and the ship side-slipped at a steep angle. "But look!—look below. And see the altimeter."

Gordon peered at the gray-lit, teetering landscape. Off to the left was a huge dome of black where the beacon station had been. It flashed across his mind that the defenders of the station had enclosed themselves in a hemisphere of darkness. Their eyes couldn't stand the light of day. He forgot about the altimeter, though realizing they were dropping fast. The smooth purr of their Diesel rose to a throb that told of operation at maximum power. Still they were falling, but sidewise, away from the black dome.

And then the very universe was crashing about them; the first salvo of bombs had let loose.

CHAPTER IX

THOUSANDS of pounds of high explosive, enough to have wiped out a large city, detonated all at once. The sound of it was ear-shattering, awesome. Mighty waves of sound and blasts of expanding gases drove out from the center of disturbance, hurling the stratosphere plane away like a fluttering leaf. Flat on the heaving floor of the control cubby, Gordon clutched at its smooth surface with slipping fingers. Through the transparent circle of one

of the floor ports he saw that the ground was very near, saw that the great dome of blackness stood as it had been, serenely unharmed.

The frame of the plane creaked protestingly with the strain of the rapidly revolving helicopter screw. Their Diesel pounded heavily.

Muller, hanging to the controls, gasped: "Something is dragging us down. Enormous weight—piled on us."

Again a veritable hell broke loose as the second salvo of bombs dropped into the clearing. The reverberations in the confined space of the cubby were deafening, yet Gordon heard the pilot's shouts above the din:

"Hold on! We're crashing!"

There came the scraping of branches along the plane's hull and the snapping of tree trunks, a series of jolts, then one final, breath-taking shock. The Diesel ceased its pounding.

Dazed, but still conscious, Gordon stirred after a moment. They were right side up, and the metal hull of the plane had apparently remained in one piece. Muller's head had contacted the instrument panel, and he was bleeding profusely from a gash over one eye. But he, too, was conscious.

"A miracle!" he croaked, groping for a wad of waste to staunch the flow of blood from his wound. "We're alive!"

Gordon scrambled to his feet and lurched through the door to the laboratory. Garrison likewise had escaped serious injury it seemed; he was hunched in his chair with the headpiece of a mentascope strapped over his ears. His eyes were red-rimmed from fatigue, and his fingers wandered aimlessly over the button controls of the instrument he had developed a few years previously for delving into the innermost recesses of the human mind. Gordon feared he had been unbalanced by the most recent events.

"Bret," he said sharply. "What are you doing?"

The scientist raised a finger and frowned to enjoin silence.

Gordon breathed easier after that, seeing that his friend was all right. But he could not imagine what he was up to with the mentascope. It was not a long range instrument, or he might have thought he was reading the minds of those creatures under the black dome that now hid the beacon station. But it was no time now to question him; Gordon held his peace.

In a few moments he heard Muller stirring about in the engine compartment of the ship. The Diesel coughed once, backfired, and was again silent. There was no more bombing; evidently the army squadron had given up. The visiphone shrilled in the laboratory. Gordon moved the lever, stilling its clamor, but did not answer.

At length Garrison tore the helmet from his head and broke out in swift speech. "Gordon," he cried, "our ship is covered ten deep with these parasites. They attacked us and brought us to the ground, but our insulated hull is keeping them out. They have mass, you know, even if they can not be seen in ordinary light."

"So what?"

"I've been probing their mentalities, their memories. It's as I suspected; they're from another planet. But they are the remnants of a race which inhabited a world that is now dead. They came here in search of a home, of new physical forms. If we kill them we will be destroying a civilization."

"If not they'll destroy ours."

"Exactly." Garrison's lean jaw set in grim lines. "I've been squeamish about this, too squeamish is my idea. But now the lid is off. It's our civilization or theirs. Theirs must die."

The Diesel coughed again, failed to start.

"How are you going to do it?" asked Gordon. "We're stuck here and there isn't any power."

The light went out of Garrison's eyes. "True," he mumbled in a tired voice. "There isn't any power."

MEANWHILE, tragedy was being enacted in a hundred towns and hamlets, in a dozen cities of the East. Influential citizens, possessed by Zorian demons, committed atrocities on their own families. Human derelicts, suddenly fired by the imagination and super-intelligence of the invading parasites, became in an instant expert mathematicians or engineers, aviators or surgeons, mechanics, astronomers, artists. The blindness in daylight would not come until later. In droves they raided shops, factories, laboratories, studios, hospitals, or as individuals took over radio stations, commandeered private aircraft, and embarked upon careers of mad experimentation with the new toys at their disposal. The industrial life of the eastern states was disrupted before the day was well begun. Children ran screaming in the streets; men and women fired with insane desires, indulged in orgies of incredible bestiality; death stalked the corridors of public buildings.

A disastrous fire was raging in New York's Chinatown. Maddened victims of the invisible parasites had blown up one of the aqueducts; the Bronx was without water. A group of laborers in midtown Manhattan worked feverishly with a machine they were constructing from parts of concrete mixers, automobiles, tubes and coils from a nearby radio station, and motors from an elevated train that was stalled on the Sixth Avenue line. When they finished with it, they set it in motion, such motion as no man

of earth had witnessed before. It was a juggernaut, ploughing relentlessly through the substructures of skyscrapers, until one after another of them collapsed in colossal ruin. The machine finally bored its way into the rock foundation of Manhattan and was lost to view.

And still the electrical parasites continued to spread and take possession of new thousands of helpless humans. Terror rippled over all of North America. Trans-oceanic air liners were crowded with people of means who hoped to escape the calamity which threatened. They did not know that foreign countries were cognizant of the danger, that it would be impossible for them to land anywhere outside of American territory. Europe and Asia, South America, Australia, Africa, all the world was setting up barriers of vibrations which, they hoped, would keep out the hordes of unseen aggressors. Certainly these barriers would keep out the fugitives from North America if nothing else.

By this time the medical profession, such of its number as remained in normal senses, admitted that this was no epidemic of disease. Men of science, who had not yet been overcome, worked unceasingly to analyze the situation and to provide a means of defense. But they were working in the dark; none of them knew where to begin. From a hundred laboratories visiphone calls went out for Bret Garrison, but no call was completed; all of the central offices in the East were inoperative. Only the newscast band remained open, since this was a free channel which required no conversion of wave band frequencies.

It seemed there was no help for the situation.

IN the Greenwood Lake beacon station, within the dome of darkness, trouble was brewing. The electrogenesis of

Zorian entities proceeded at an increased rate, the organisms filtering through the wall of the dome and taking flight into the tortured outside world as quickly as they reached maturity. That part of it was satisfactory to the intruders, but some of the reports, that came in from the outside, brought consternation to at least one of the thirty-four original entities.

This was Oa, active in the person of Ann Pelton. With the faculty of human compassion which had been left to her, she became horrified at the results of the invasion of earth. She remonstrated with Izon, both mentally and through bitter conversations between Ann and young Riddell. All without result; the others insisted upon going through with the program as originally planned, regardless of consequences.

The relation between Ann and her control was a peculiar one, a real friendship having been established since the meeting with Wayne Gordon. Oa's sympathy had brought about a close communion that was not to be compared to the other relationships. Only Peter Marsland was in a similar state, but in his case the only emotion was the passion for Ann, a revival under terrestrial conditions of the old passion of Throg for Oa, which had been a hopeless one.

Ann tried to enlist Marsland in a scheme to bring about the end of the Zorian invasion. Oa, fully realizing that this meant the failure of her father's hopes and the extinction of her kind, nevertheless lay dormant in Ann's consciousness, acquiescent. Marsland responded with a burst of frenzied love-making which sent Ann scuttling from the laboratory into the open. Marsland grabbed her roughly, endeavoring to force his attentions on her. She broke away and fled toward the outer confines of the sphere of darkness. She broke through into the sunshine with Mars-

land close behind her and was at once blinded by the unaccustomed brilliance. She gave up hope.

MULLER had succeeded in repairing the Diesel. Its generator provided the power necessary for the continuance of Garrison's work, and his first act was to charge the hull of the plane with the complex energies which, he knew, would destroy the electrical parasites. The tens of thousands of inimical organisms, clinging to their vessel, were reduced to cinders of matter that was constituted of normal atoms. With this weight removed, the plane rose jerkily, uncertainly. One of the four blades of the vertical prop had broken off and it was impossible to attain much altitude. But they were aloft at last.

Garrison worked swiftly with the projector of his energies. He felt sure that he now had a means of penetrating the dome of blackness. Gordon turned on the apparatus which produced the mixed radiations that made the parasites visible, and observed by its use the endless stream of them which issued from the dome and drifted down the hillside toward civilization. He heard the spiteful hiss of Bret's new projector and saw a circle of bright red outlined against the black hemisphere down there in the clearing. The red circle widened, seemed about to sink through, then faded to blackness. Garrison had failed once more.

Then Gordon saw the two figures break through the wall of the dome, a man and a woman. They were stumbling blindly, both of them, but he saw that the man was groping for the woman with clawed fingers. The woman raised her face to the heavens, crying out in her extremity. Gordon snapped on the sound apparatus with shaking fingers.

"Wayne Gordon!" the voice rang out. "Help! Help me, Wayne."

"It's Ann!" he choked. "Bret! Muller! Get me down there."

"It's no use," Garrison told him pityingly.

For once, Gordon raved at his friend "Don't tell me that. Hell's hinges!—that's Ann. Do you understand?"

The scientist did understand and yelled an order to Muller to land in the clearing. Perhaps, he thought, he would be able to protect his rash friend with the projector.

Muller dropped the plane beside the pair of humans in the clearing. Peter Marsland had caught Ann, who was tearing with all her strength at his encircling arms. Gordon was out of the plane as soon as it hit the ground, grappling with the parasite-controlled Marsland. He swung a terrific punch to the man's chin, breaking his hold on the girl. A green flash stung him but, at this close range, had little numbing effect. He swung again and again but the repeated flashes were more effective now. His left arm dropped to his side. He staggered.

A brilliant light streamed out from the plane, a flare which dimmed to yellow pallor the light of the sun. It struck Marsland full in the breast, brought him writhing to the ground. Gordon wheeled dizzily to the plane and saw that Ann was crawling through the entrance port. He wriggled in after her, and everything went blank with the slamming of the door behind him.

AFTERWARDS, Garrison was glad that Wayne's mind was a blank during the events immediately following. Now he would never see Ann Pelton as she appeared while possessed of her control. The green blotches, the twisted features—Gordon would never know.

Consciousness returned slowly but pleasantly. Gordon awoke once more to

the touch of soft fingers. For long minutes, as he looked up into Ann's face, he did not speak, only clinging to her with the sure knowledge of happiness found that comes once in a man's life. Then he sat up and began asking questions. They were alone, he and Ann, in one of the plane's cubbies. Through a floor port he saw that they were slowly crossing the Hudson, a few hundred feet up.

"What happened?" he demanded.

"It was my control," the girl told him, and there was a hint of sadness in her voice. "She—once a woman herself—gave up all hope of future existence and sacrificed her entire race to save ours. She told Garrison how to batter down the black dome, speaking through my lips, and then she withdrew from my body and brain. Of course she has perished by now. The rest you can guess."

"Garrison destroyed the controls of those in the station?"

"Yes, without harm to the humans they inhabited. Then he visiphoned instructions to the Research Bureau in Washington. Energies he discovered are now at work everywhere killing off the rest of the parasites. It will soon be over."

"And Marsland?"

"He recovered. He won't even know me—it was his control."

Gordon thought hard for a moment, an unaccountable nausea sweeping over him as he reflected upon the stupendous truth that a civilization had been or was being wiped out. Resolutely then he turned his mind to other and more pleasant things. Their own civilization had been saved. Besides, here was Ann.

He drew her to him. "Well," observed he, "that's that. And you know,"—reminiscently, "I once liked nothing better than to brag about things I *used* to do. Now I—no, we—will talk about the future."

Ann nodded brightly. At last all was as it should be.

THE END



IN THE AUGUST ISSUE

Escape from Ceres

BY CLARA E. CHESNUTT

The Never-Dying Light

BY J. LEWIS BURTT, B.Sc.

The Inner World

By A. HYATT VERRILL

Part II

In this second part of Mr. Verrill's story the reader will find that he maintains the interest and that the result is a real A. Hyatt Verrill story. He keeps us in the inner world of which so much has been told in the past in the way of surmise and even of fixed belief.

What Has Gone Before:

A brightly painted metal sphere was found floating in the ocean off the Virgin Islands by Valdemar Broberg. On opening the sphere, Broberg finds a written communication on parchment asking that the sphere and its contents be forwarded to the narrator of this story. On opening the sphere, the paper was found to be covered with the unmistakable handwriting of Dr. Thurlow, supposed to be long dead. The narrator tells of a talk he had had with Dr. Thurlow just before the doctor's disappearance, and how the latter upheld the theory that the earth was hollow and its interior inhabited. In his written communication, Dr. Thurlow tells his friend that he is now in the interior of the earth, that it is hollow, and he does not know how he entered it, being unconscious part of the time. Dr. Thurlow describes very vividly the interior of the earth; the curious plants, some able to move about; the various inhabitants, some having tentacle-like legs and eight eyes carried on stalks, others resembling a combination of gigantic insects, or a mixture of octopus, ant, human being and bat, calling themselves Tas'Zors. The first time one of the Tas'Zors sees the doctor it picks him up in its resistless tentacles and carries him off into a brilliantly illuminated city. Everywhere were throngs of strange beings. Many were Tas'Zors identical with the one who had brought the doctor to the city, but others were even stranger and weirder. The doctor writes, "To be sure I was armed, but I must admit that, so far, not one of the creatures had exhibited any signs of hostility, their expressions all told of wonder and curiosity rather than of enmity. It was all I could do to control myself as the finger-like snakey things felt over my person and when one caressed by face I could stand no more and struck it viciously with my hand. I was instantly encircled by a powerful tentacle and was pitched into an enclosure that resembled a bear-pit. In the pit were three bat creatures and there a horrible battle ensued. As the last one went down, I was caught under its wing and knocked unconscious. When I came to I was in a room. I was not alone;

on seeing me move, a creature with iridescent metallic armor brought me food and tried in every way possible to make me understand that they considered me a superior being after my battle with the bats. My two revolvers and my knife lay beside me. At last, having dined, I rose, and by dint of signs indicated that I desired to go outside. My companion seemed quick to grasp my meaning, and before long I came into the outer air with its strange, luminous, multi-colored glow that illuminated this city of the inner world."

CHAPTER V

War

AS I glanced about I discovered that none of the innumerable buildings possessed visible doors or entrances, but that all were connected by underground passages with manhole-like openings into the streets. But I had little time to speculate on the reason for this. Almost instantly my strange companion and myself were surrounded by a crowd of the strange, impossibly-weird denizens of the city. And their tones, their actions, their entire manner were respectful, almost worshipful. Strange, I thought, how alike were these bizarre creatures of the inner world and my fellow men of the outer sphere in their reactions to an event which appeared startling or novel. They were as much carried away by enthusiasm and hero worship as any Broadway crowd, for to them my weapons and my battle with the giant captive bats were on a par with



A single glance at the roof with the masses of stalactites assured me that we were in a natural cavern.

Lindbergh's flight or Byrd's conquest of the Antarctic as regarded by humans. And my presence aroused the same enthusiasm, the same ridiculous sort of demonstrations that have been in vogue since the first cave-man slew the first cave-bear and was treated like a demi-god by his less courageous fellows. Still, such human-like characteristics in these strange beings amazed me, for they were not in the least human otherwise. And their attitude towards me struck me as being entirely out of proportion to the causes which had aroused it. But then, of course, I did not at the time understand what really was back of it.

But enough of this. I would have given anything to have been able to converse or even communicate intelligently with the creatures, for on every side were amazing, puzzling matters which aroused my most intense interest, but which were inexplicable to me at the time. There is no need to enter into a minute or detailed account of all I saw, for my time and my space are both limited and there are more important or at least more vital matters to relate. Moreover, were I to attempt to describe many things they would still remain incomprehensible to you and my fellow men, if ever this document should reach you, my friend, for whom it is intended.

Enough to say that for several days I devoted my time to exploring the city and that, after the first day or two, I could move about without being constantly surrounded by a mob. And I must digress long enough to explain that when I say "days" I mean periods of twenty-four hours by my watch, for in this interior world there are neither days nor nights, nor as far as I have been able to determine, any such thing as time. Of course, when I came to think of it, there was no reason why time should exist. To us time has so long become a habit, a necessity I might say,

that mankind scarcely could exist without it. Yet time, as we know it, is merely an arbitrary matter dependent and based upon the periods of light and darkness caused by the rotation of the earth. But here, in the interior of the world, there are no such periods, no planets on which to base any observations or to serve as standards, and hence no standard of time. And the denizens appear to get along just as well—perhaps better—in spite of its absence.

For several days, as I say, I explored the city, reasoning out and by observation solving many puzzles, and acquiring a slight familiarity with the medium of communication—I can scarcely call it a language—of the inhabitants. Even my presence seemed to have become little more than an accepted fact, for these creatures appear to possess no curiosity and, the first novelty of my appearance having worn off, the beings seemed scarcely to give me a second thought. No, I cannot say that. Always, wherever I went, I was accompanied by a group of the metallic-armored creatures, like the police-guard that accompanies some great personage or crowned head when visiting one of our earth cities.

It was while thus wandering about, accompanied by my body-guard, about ten days after my arrival that suddenly and without any apparent reason there was a tremendous commotion in the city. I was near the water front at the time, when sharp, shrill, excited cries arose from every side. The creatures in the neighborhood started to scurrying, flying, hurrying off in every direction, and the air seemed suddenly to be filled with countless Tss'zors winging with incredible speed towards the landing-places. Almost instantly my guards formed a cordon about me. By gestures, clicks and squeaks they urged me on, and conducted me into an unusually large man-hole and through underground passages

into a very large transparent chamber.

EVERYWHERE the streets were filled with fleeing inhabitants of every type, all chattering, squealing, squeaking, chirruping and obviously panic stricken, all tumbling as fast as possible into the apertures that led to the queer, domed houses. Overhead, the flying Tss'zors were winging downward in scores, their lights flashing and gleaming. In a marvelously short time the last of the beings on the streets, together with most of the Tss'zors, had vanished in their burrows, and the city was deserted. But above the town, and flying back and forth just within the area of multicolored light, was a veritable army of Tss'zors and a legion of the metallic-winged creatures like those filling the chamber in which I stood. What was it all about? What had caused the sudden panic? That there was some untoward event, some danger impending, was evident; and that it was something from above, from the outer blue darkness, I felt sure, yet I could not imagine what it could be.

Suddenly I saw a squadron of the Tss'zors dash upward and to one side. The veil of light seemed suddenly obliterated in one spot. Against the glow I could see dim, dark, swiftly-moving shapes at which the Tss'zors hurled themselves in a solid phalanx.

I STOOD spellbound, enthralled, gazing at that terrific battle in the sky. The flashing lights of the Tss'zors, with their swiftly moving bodies, their snake-like tentacles coiling and uncoiling, their armor-like shells, gleaming orange, green, purple, as their light rays were radiated from their bodies, their swiftly-moving membranous wings, mingled with huge, black bodies, with wide-spread, dusky wings, as they fought and struggled with the horde of giant ene-

mies that had appeared from nowhere out of the fathomless blue void.

It was the same on every side. In a dozen places the Tss'zors were engaged in the terrific aerial struggle, while in one spot the squadrons of iridescent-armored guards were hurling themselves with incredible fury at the enemy. No battle between human-made aircraft could equal or even approach this warfare between the two winged hosts who fought, not with rapid-fire guns and flaming, thundering weapons, but hand to hand (if such a term may be used) with the claws, teeth, pincers and digits given them by nature. And they fought with the insane ferocity, the utter disregard of danger and death of brute beasts—far more than that—with the inconceivable ferocity of battling ants or insects.

Fragments of limbs, torn wings, dismembered bodies fell hurtling downward by dozens, and as I saw the mutilated black forms of the enemies come plunging, spinning, somersaulting through the air like great disabled airplanes, I gasped. They were bats. Giant, repulsive vampires! The same horrible creatures as those with whom I had battled on that day when I had first arrived! No wonder the inhabitants had fled in terror. No wonder the Tss'zors were fighting furiously to drive off these blood sucking attackers from the outer void. Unquestionably there had been other raids and—the thought was somewhat reassuring—the Tss'zors must have been the victors, else the crippled prisoners of war would not have been in that foul pen, where I had been thrown like a Christian martyr to the wild beasts in Rome.

My very soul revolted at the thought of the fearsome things reaching the city, and in my dread of what might follow, were the giant vampires victorious, I quite forgot that within the domed buildings I and the inhabitants of the town

were safe. Safe from the blood-thirsty fangs of the great bats, yes, for even they would be powerless to destroy or to penetrate the thick walls of the dwellings, and their huge bodies could not enter through the narrow apertures and passages. But, I was doomed to a death as bad if not worse than being torn to pieces by the creatures, doomed to starve to death, if once the enemy was in control of the city.

And now the tide of battle had turned. Despite their frantic struggles, their heroic efforts, their awful sacrifices, the Tss'zors were being decimated. Only a pitiful few remained, still fighting ferociously against the ever-increasing hordes of bats. But there was no thought of retreat. With fixed eyes, speechless, fascinated by the fearfulness of the scene, I watched as, one by one, the remaining defenders were overcome, as their mutilated, dismembered remains fell from above, until not a Tss'zor remained alive, and before my horror-stricken eyes the army of blood-lustful vampires came swooping downward upon the stricken city. How many there were I cannot say. But there must have been thousands. With a chorus of piercing, horrible squeaks and chattering they alighted; crawling with great, leathery fluttering wings over the buildings, pausing here and there to devour the bodies or the limbs of their fallen fellows and of the Tss'zors. And then, suddenly, I heard a new sound. A strange, rushing, roaring sound, and outward from the great opening in the cliff came a seething, foaming stream of water; a torrent that almost instantly flooded the streets, that buried the buildings until only the domed roof rose above the rushing tide, that overwhelmed the army of great bats before they could take wing, that bore them, helplessly struggling, into the sea to drown. Instantly, at this amazing sight, I under-

stood many matters that had puzzled me. The purpose of that great tunnel in the cliff, the reason why the houses had no doors, why they were reached only by subterranean passages—all had been planned to provide protection from these terrible loathsome enemies, to afford a means of destroying them, once they invaded the city. But I had little time to think on such matters. The creatures within the chamber were chattering excitedly, they were tugging at me, urging me to descend from my perch. I took a last glance. The flood had ended, only a trickle of water remained in the streets. Here and there the water-soaked, dead bodies of drowned vampires were wedged against buildings or other obstructions, and several dozen of the awful beasts were clinging to the tops of the higher structures, opening and shutting their great wings, squeaking angrily, their red eyes blazing, their terrible teeth bared.

I COULD watch no longer. My guards were becoming insistent, and I sprang from my perch wondering what the creatures wished me to do. I was not left long in doubt. Surrounded by them I hurried downwards into the passageway which, to my surprise, was free from water, and towards the street. I drew back, filled with terror. I was about to be thrust out into the open to face those vicious awful beasts, to be sacrificed with the idea—perhaps—that, having devoured me, the creatures would be appeased and would depart.

I struggled, fought. I was about to draw my pistol, to shoot down my guards and even put a bullet through my own head rather than be delivered to the bats, when suddenly it dawned upon me that the actions of the gorgeous creatures about me were not those of beings intent on delivering me to their bloodthirsty enemies. They were not

using force. Had they so desired, any one of them could have seized me, and holding me as helpless as a child, could have carried me bodily from the passage. Neither were their tones raised in anger or command. Rather, they were anxious, argumentive, coaxing. And though they urged me onwards they used only their soft, delicate digits and touched me gently, reassuringly.

Abruptly, with realization of this, much of my terror left me. There was something I did not understand, some reason for my guards wishing me to go on. And now, from the street above us, came excited sounds, loud cries, frenzied squeals, the high pitched, shrilling, insect-like notes of Tss'zors; the uncanny, squeaking chatter of the bats. Reaching towards me one of my companions touched my revolver, lifted it partly from its holster, did the same with my hunting knife and pointed upwards. Like a revelation his meaning was clear to me. Outside a battle was in progress and my services and my weapons were required in the struggle.

Instantly everything was clear to me. I understood why I had been treated so well, why I had been protected and cared for. The beings had seen me kill the vampire prisoners with my strange weapons, and had preserved me as a powerful—in fact very probably to their minds, supernatural ally. In fact, when I came to think of it, I was amazed that, regarding me and my weapons as they did, they had not sent me forth to battle single-handed against the army of bats, without resorting to their own effective method of destroying the bulk of the enemy. As it was it was bad enough. When I had last looked through the slits of the building there had been dozens of the giant vampires still alive in the city, and for a lone man armed with only a revolver and a hunting knife to face the huge, terribly

savage creatures was much like a man similarly armed attacking a score of grizzly bears or Bengal tigers.

Still, as I knew from the sounds reaching me from the streets, there were others battling with the horrible creatures, and such an intense loathing and hatred of the things possessed me, that I forgot all fears and all caution and rushed upward grasping my weapons in my hands.

AS I reached the street I came upon a scene such as no words can adequately describe; a scene of battle, beside which the bloodiest conflicts of human warfare are scarcely more than frolics. A scene of such brute ferocity, such fearful carnage, such fiendish cruelty and disregard of wounds as baffles description. No longer were the Tss'zors taking an active part in the fighting. The duty of mopping up the surviving, gigantic bats, the hand-to-hand struggle in the streets, was relegated to the iridescent creatures—the Iss-dors as they are called. I had thought that the aerial conflict I had witnessed was terrific and bloody; but it had been tame compared to the war of extermination. To be sure, there were comparatively few of the giant vampires left alive in the city; but compared to the size of the Iss-dors they were like elephants to human beings. And though most were bedraggled, and owing to their wet, heavy fur were unable to take flight, yet they could use their huge membraneous wings, and, with a quick flip, would leap a prodigious distance either to hurl themselves upon their foes or to escape from an attack. And a number were still unharmed and were flying overhead, ever and again swooping down upon the struggling groups in the streets. But the onslaughts of these played but a small part in the battle. They were fully engaged in fighting a

host of Tss-zors and Iss-dors overhead, and, every few seconds, mangled bodies or dismembered fragments of friends and foes would come hurtling down. Several times I narrowly escaped injury or death by these falling bodies and limbs, and I saw one group of Iss-dors crushed to pulp beneath the falling carcass of a huge bat.

It was as if two squadrons of airplanes were battling above one of your cities, while troops were fighting in the streets below. But no human troops, no terrestrial carnivores, ever fought as did these creatures. As I have said, the bats were the size of grizzly bears; but they were a thousand times more dangerous. If you can imagine a Kadiak bear with the agility of a panther, with wings which, with a single flip, will enable him to leap forty or fifty feet, with teeth over a foot in length, then you will have a faint idea of the terrible beasts I was called upon to face. And, compared to the Iss-dors, I was a puny, helpless being despite my knife and pistol. Clad in chitinous armor, equipped with eight legs, each armed with natural weapons, far more agile than any athlete, and possessing the prodigious strength in proportion to size which is typical of insects, the creatures were scarcely more than fighting machines—living armored tanks—endowed with a high degree of intelligence. And they could survive injuries that would have proved fatal to human beings, without in the least interfering with their activity or their aggressiveness. Close to where I stood was one of the beings who had lost five of its eight legs, and yet was battling madly with a crippled bat or Oz-mok as they are called.

But I never saw the end of the duel. In fact I had but the fraction of a second to take in the terrible scenes being enacted on every side before I found myself in the midst of the carnage. It

would have been bad enough to have taken a hand in the fighting but the moment I appeared, the Iss-dors in my vicinity instantly withdrew, leaving me to face the enraged, monstrous Oz-moks alone. Never have I been so filled with terror. My ghastly fear when, in their den, the crippled beasts had attacked me, had been nothing compared to my horror and terror now.

I faced two of the monstrous beasts which, scarcely injured, with their wings still intact, were rushing at me. One, squatting upon the ground, was already opening its wings to spring. The other, poised on the roof of one of the cylindrical buildings, was striving to secure a firm foothold from which to launch itself upon me. There was no time for hesitation, no time to retreat, even had I not been as fearful of the watching Iss-dors in my rear as of the ferocious beasts I faced.

WITH a terrific effort I controlled my shaking hand and fired at the brute crouching upon the earth. Luck or Providence must have guided the bullet, for it struck fairly between the giant bat's eyes, and he sank to the earth without a sound. But at the same instant the great beast upon the house-top launched itself upon me. I had no warning, no chance to aim and fire. I tried to leap aside, I escaped the snapping jaws by a hairbreadth, but was struck a terrific blow by the bony phalange of the creatures' wing and was felled, dazed and half-stunned. Only the fact that I was enfolded in the wing saved me from certain death. Grasping a fold of the leathery membrane with one hand, I pressed my revolver against the monster's side and fired as fast as I could pull the trigger. Madly the savage beast strove to dislodge me, to reach me with its clashing fangs. But I hung on with the desperation of despair. I was tossed

about, hammered, beaten, bruised, as the monster flapped its wings endeavoring to rise. But my weight was too great, and its efforts resulted merely in whirling in a circle. And my bullets seemed to have no effect.

As the last cartridge was discharged I drew my knife and drove it with all my strength into the beast's flesh. There, beneath the wing, the hair was short and thin, and I plunged the blade in to the hilt. Again and again I struck. Madened by pain and terror, with insane fury, I slashed, dug, ripped with the keen-edged steel, literally carving my way into the beast's vitals. Blood spurted from the gaping wound and drenched me from head to foot, the awful musky stench of the brute nauseated me, almost overpowered me. But I had become a maniac of fury, no longer a civilized man, but a blood-thirsty savage. Dimly I was aware that the monster's struggles were decreasing, only half consciously did I realize that presently its struggles ceased altogether. And for some time after the creature had ceased to live I continued to stab, tear and slash at the reeking flesh.

Exhausted, faint, I crawled from beneath the wing of the dead beast. My appearance was greeted with a chorus of hisses, clucks, buzzes and strange half-insect, half-bird-like chirps which corresponded to cheers. The battle in the air had ceased. Whether it was the detonations of my revolver shots, the flashes of the discharges, or the acrid smoke, I do not know. But at the first reports of my revolver the bats—no, the Oz-moks—overhead had been panic stricken and had winged away as fast as they could fly, while those still upon the ground had squeaked in terror and had flopped and scrambled off, seeking some refuge, only to be chased and destroyed without mercy by the victorious Iss-dors.

The battle was over and I found myself regarded as a hero. No, there was more. In the estimation of the strange inhabitants of this impossible city I had been exalted to the status of a divine or supernatural being. The Tss-zors and Iss-dors gathered about, chirping, chattering, emitting shrill, pleased sounds and obviously complimenting and congratulating me. The flat-faced, fishy-eyed, Uk-kuls uttered weird squawks, as they opened and closed their vacuous, toothless mouths and fluttered their rudimentary wings. The porcine, pulpy, wingless Tu-jeers fairly grunted with delight, and their illuminated horns flashed and twinkled as they rolled and waddled about. Even the long-necked, flipper-equipped Mo-hals joined the assemblage of bizarre creatures, and grunted and wheezed as they inflated their membranous, illuminated chests, much as the little West Indian house lizards inflate their orange, gular* pouches, when highly pleased. A moment later the crowd parted and the two grotesque, balloon-like, living heads appeared, their ruby-red faces glowing like giant jack-o'-lanterns, and their telescopic eyes focussed upon me like a battery of guns. But their attitude was very different from what they had preserved on the previous occasion. Also, I had learned by experience. Despite the repugnance I felt, I controlled myself as they touched me with their finger-like tentacles, for I realized that they were friendly, that they were striving, as well as they were able, to assure me of their friendly intentions, and that, as I had intruded myself upon their world, I must abide by their customs and rules.

But despite the fact that I have now dwelt here for more than a year of earth time, I have never yet overcome my in-born feeling of dislike for many of the creatures, and the repugnance I have for

*Upon the throat or gullet.

others, while from the very first I have been strangely drawn toward the gorgeous Iss-dors.

Although my life was doubtless saved by the Tss-'Zors who carried me to the city when I first arrived, yet almost involuntarily and unconsciously I have felt a companionship, a sympathy with the big, eight-armed, highly intelligent Iss-dors, a sort of friendship which, despite every effort, I have been unable to develop towards any of the other creatures here in this incredible inner world.

CHAPTER VI

A Brief Digression

BEFORE proceeding further with my narrative, old friend, let me digress a little to explain that I long ago learned to converse—after a fashion—with the weird creatures here. This fact will explain why and how I have learned so much regarding the place and its denizens, and by mentioning it here, I will be saved the time and trouble of over and over again explaining the meaning of names and words I must use, when referring to various beings and objects during my story; names which must be used, for there are no counterparts of the things in the world you know, and hence no words to describe them. Also, if you should see fit to bring this story to the attention of my former fellow scientists, they no doubt may be interested in learning something of the means of communication by which these beings converse. First, let me state that among themselves they can communicate many thoughts and ideas by means of electro-magnetic waves, the action of which are entirely beyond my comprehension, and which are transmitted and received through the same organs which produce the lights. But in addition to this they possess a

true language, and a very complex and expressive language, or rather, I might say, a combination of languages.

It is in a way something like the Quichua of the Incas, or a bit like Esperanto, inasmuch as it is polyglot tongue embodying features of a dozen languages. The basis is the language of the Iss-dors, who are by far the most intelligent, the most advanced and the most virile race here.

But through the ages, bits of the other dialects have been added, until now it is a truly universal tongue. No, I can't properly refer to it as a tongue, for with one or two exceptions—as the Uk-kuls, the Tu-jeers and the Mo-hals, the sounds are produced by special vibratory organs and not by vocal cords. And the greatest difficulty I have found has been in mastering the strange insect-like sounds, in reproducing them by means of the human organs of speech, and in distinguishing between them by means of the human ear. In fact I have not yet been able to distinguish the finer gradations and higher notes, while many are pitched so high or so low as to be far beyond the auditory range of a human being.

Neither is it at all possible to convey more than an approximate idea of the sounds by means of letters of our world's alphabets. For example, the name of the city—Ju-iss-Zit—is as near as I can convey it, while the name bestowed upon me—in the efforts of these creatures to repeat my name—is "Tssu-uloss" which even you will agree is a pretty poor stab at Thurlow.

I might also add that the language is an exceedingly difficult one to master. In fact no human being ever could really master it, and had I not been a natural linguist, and had I not been familiar with several of the primitive languages of the African and South American tribes, I would have been unable to have

progressed to a working knowledge of this inner world dialect. Its chief peculiarity is the fact that it possesses no verbs. It is composed entirely of nouns, pronouns, adjectives, prepositions and numerals. You may wonder how an idea or thought can be expressed without verbs, but it really is quite simple. For example, suppose I wish to say "Where are you going?" The word for place is *Ils*, "you" is *So*, "foot" is *Cha*, and to denote a question the word *Pst* is used. The complete sentence would be "Pst-cha-ils-so" or literally "What place your foot?" But the sentence as expressed in this language is far more complete and definite than if literally translated into English. And moreover, the sentence would be changed were I to ask where a creature was going if he were going by flight, or again changed if he were going by water, etc. Finally, comparatives and superlatives are formed by adding syllables to a noun—in the middle of the word for comparative and at the end for superlative. Thus "Pu-tu-ru-il" means "high" but "Pu-tu-pu-ru-il" means higher and "Pu-tu-il-pu" means highest. The repetition of the first syllable conveys the comparative or superlative as compared with other objects of a like nature, whereas if compared to objects of a different sort the last syllable would be used.

So if I wished to say that a Tss-zor was higher than an Iss-dor I would use the word "Pu-tu-il-ru-il" and to speak of an object as the highest object in a neighborhood (where there were objects other than the one to which I referred) I would say "Pu-tu-ru-il-il." Of course all of this seems complicated and confusing, but it is no worse than our "er" and "est" and "more" and "most" or in our ridiculous genders. Besides, these people, for I must call them people, can instantly denote whether an object is on land, in the air or in the water by a

slight alteration of the noun itself. An Oz-mok or bat is merely Ozmuk in air; but the moment he is on the earth he becomes an Or-mur and if in the water an Oz-mul. These endings "k" "l" and "r" never change. A Tss-zor flying becomes a Tss-soz and if he is on or in water he is a Tss-zol. It is for this reason that all the beings whose natural habitat is earth have names ending in "r," those who are primarily maritime end in "l" and those whose natural element is air have names ending in "k." The one exception is the name "Cheek Horlks" applied to the "big heads" or "wise ones" who, although confined to earth, are lords or rulers of earth, sea and air, and hence have all the letters combined. My own name, as they pronounce it, would indicate that I am a being from nowhere—the ending "s" indicating uncertainty or "unknown." Hence they call my revolver the "Phriss," and my knife, "Ist-oss." The terminal "t" indicates a stationary thing or site, hence the name of the city—"Jussiss-zit" or as nearly as it may be translated: "The place or site of the Tss-zors and Iss-dors with the Others."

But enough of this. I don't suppose you are in the least interested.

BUT there was another discovery I made which may interest you as a medical man. With very few exceptions every living thing I have seen here is artificial. By that I do not mean the animals and plants are imitations. Nor do I imply that they are exactly synthetic. But not a single form of life—with the possible exception of the wild plants, the terrestrial polyps and invertebrates, and a few other things considered worthless, not a single form of life aside from such is natural. What manner of beings were the original denizens of this inner world, I cannot say. I imagine that they were some form of

marine crustacean not unlike the trilobites or the common "sow-bugs" of your outer world. Also, very probably, their evolution reached the stage of simple vertebrates—perhaps even primitive forms of saurians. At any rate, life must have originated in the sea, and from there have spread to land. And I now am convinced that the reason why marine forms of life—or rather forms which we deem marine—have adapted themselves to a terrestrial life here is owing to the absence of natural light. On the outer surface of the earth, sunlight prevents the marine creatures from leaving their natural habitat. To be sure, some forms have developed a certain resistance to light and can survive the interval between tides. But if you stop to think you will recall that on your earth, all terrestrial animals, which are closely related to marine forms, hide from light beneath stones, etc., and come forth only at night. Also, you will realize, if you think over the matter, that such forms of plant life, as have become marine dwellers, are akin to forms which, on earth, thrive only in dark, shady locations. But to return to my statement in regard to the freakish inhabitants or "people" of this inner world. All are the results of hybridization, of scientifically controlled evolution, and of artificial propagation and development. And all are—incredible as it may appear—combinations of the great animal orders—of the insects, vertebrates, polyps, and some unknown remote ancestral type. Not a single form is mammalian or even warm-blooded! Even the giant Osmoks, which I have referred to as "bats," are not really bats. They are not even warm-blooded, as I discovered to my horror when I stabbed the monster to death on that memorable day. Just what they are I cannot say, but I consider them a form of reptile. And, incredible as it may seem, monstrous as it

appeared to me, the Tss-zors, Iss-dors and Mo-hals all have a certain percentage of the Oz-Moks in their structure. Who or what first conceived the idea of developing a dozen or more highly specialized forms of "freaks" by artificial hybridization and rearing is unknown; but the Iss-dors claim that they are the descendents of the original dominating race, and the others are usurpers. As a result, the really superior Iss-dors regard the Tss-dors and other forms somewhat as a pure negro or a pure-blooded white man regards a mulatto on your outer earth. But as they are completely controlled and dominated by the Cheek-Horlks (there are, I have found, scores, hundreds, of these "living heads") who control the relative numbers of each kind of inhabitant, and have charge of all development and propagation, the Iss-dors have been compelled to bow to the Tss-sors, though deemed higher than the Uk-Kuls or the Tu-jeers and Mo-hals.

You may laugh—at the idea of an embryo's arrested or retarded development bringing about totally distinct forms of life. But stop to remember what happens with the bees! Bear in mind the inexplicable fact that an ordinary bee larva, if fed on the "royal jelly," will develop into a queen bee, whereas, if left alone and fed normally, it will become merely a worker. And having considered this fact, and with your mind ready to receive new ideas and with your imagination given free reign, try to reason out what might be the result if the larva in its cell, instead of being the young of a honey bee, was the result of hybridization of a bee and an army ant. Would it then be so preposterous to assume that by some special feeding or treatment the larva could be developed into either a monstrous queen bee or a queen ant or a combination of both?

I DO not see anything unreasonable in such an assumption. And that it is neither unreasonable nor unscientific is proved by the fact that precisely such a process is followed here. Take the Tss-zors, for example. They possess certain features of the polyps—note the tentacles, the suckers, etc. They have distinctly crustacean, segmented bodies, antennae, pincers and chitinous armor. They have the eyes of insects, the fur of vertebrates, the membranous wings of flying lizards.

They present, in short, an actual proof of the mingling of many orders of animal life, and yet in their larval form they cannot be distinguished from the Tu-Jeers which are nine-tenths polyp in character, nor from the Mo-Hals, which are distinctly reptilian. For that matter—though I cannot vouch for it from personal observation—the young are identical with the larvae which, eventually, are developed into the Cheek-Horlks or dominating intelligences of the community. But the larvae of the Iss-dors are quite distinct, which leads me to think that they are correct in their claim of being a distinct race of beings. Of course there is no sex among these freaks. In the first place, as you and all scientists are aware, hybridization between animals, even of the same genera, results in sterility in the majority of cases. In the second place, care is taken that the larvae are reared so as to become sexless, for should male and female beings—of the Tss-Zor class for example, be developed and allowed to live, there would be grave danger of their offspring increasing to such an extent that they would dominate everything.

How, you may well ask, can species be propagated without sex? You cannot be blamed for such a question. for in your outer world scientists have been experimenting with the production of synthetic life basing all their ideas on

the necessity of male and female cells. But here the line of experimenting—and success—has been along totally distinct lines—along the line of spontaneous life brought about through electrical, or I might say, electro-magnetic, impulses operating upon protoplasmic cellular tissues. And already, from what I have seen, I can assure you that if my old confrères in the old-fogyish world of science wish to produce life, regardless of sex or fertilized cells, let them scrap all they have done and try starting life exactly as it was started in the beginning of creation—by means of incalculably high-frequency electro-magnetic impulses directed upon slimes. Every atom contains all the elements of actual life. All that is necessary is to start the proper impulses within the atoms and life will appear. Sex, fertilization! Mere words, relative terms! When a seed or an ovary or other so-called “female” cell is fertilized to produce life what happens? Nothing more nor less than an electrical impulse! I can best compare it to the action of the old-fashioned plunge batteries, the bichromate of potash cells. As long as the zinc electrodes remained out of the liquid no current was generated, of course. But the instant the zincs were immersed there was generated a powerful electric current.

The same, or at least a quite analogous, thing occurs when the spermatozoon comes into contact with the female cell. A sudden terrifically high-frequency impulse is produced and the atoms of the cells spring into life. But I am forgetting that I am writing a brief narrative of my adventures and experiences rather than a scientific treatise. Still, this dissertation will save space and confusion and digressions later on. But to go back to the main thread of my story.

CHAPTER VII

Explorations and Discoveries

ONE result of my new status in the community was that I found myself free to go anywhere I chose. To be sure I was always accompanied by a body-guard of the Iss-dors, but I realized they were there to protect me, and they invariably kept at some distance and never interfered in any way with my movements.

The first thing I did was to explore the city. I had an excellent bird's eye view of the town when I first arrived, carried in the grasp of the Tss-Zor; but anyone who has seen a strange city from an airplane, and afterwards has wandered through its streets, knows how different the one impression is from the other. Perhaps the most striking feature of the city was its monotony. The straight avenues, radiating from the great orifice in the cliff, were all precisely alike, and the innumerable pill box-like dwellings differed one from another only in size. Nowhere was there a building of another type, nowhere an imposing edifice. And though many inhabitants were to be seen, there was not a shop, a factory or any sign of business, occupation or industry visible. Despite the living beings in evidence, the place gave me the impression of being dead—a deserted city. Little did I dream, on that first occasion, that I was actually strolling on the roof of the city and not in the city itself; that beneath the avenues with the rows of cylindrical structures were hordes of the inhabitants.

But I discovered that beneath the surface the place is a labyrinth of passages, thoroughfares, rooms, chambers and cavernous halls wherein the strange beings dwell and pass their lives and carry on their duties and occupations. Neither is this subterranean city a dark

and dismal place. On the contrary it is brilliantly illuminated, the air is fresh, and aside from the fact that the streets or passageways are roofed over I would never have suspected that I was underground had I not known such to be the case. Here are the immense chambers or buildings of the Cheek-Horlks—the “Big heads” as I always mentally term them. Here are their laboratories, their Toks-chat or “place of life” where masses of artificially developed slimes are transformed into countless squirming embryonic forms of life. Here, too, are the incubation rooms, the rearing cells, the nurseries wherein the larvae were treated and fed to produce Tss-zors, Uk-kuls, Tu-jeers or Mo-hals as required, and here dwelt and delved and pondered the grotesque, repugnant-looking beings, the “big-heads,” who ruled and regulated and controlled the entire community, as though it were a vast machine responding instantly and with perfect precision and certainty to their touch upon the levers. I use the past tense in speaking of them, you may notice. For the Cheek-Horlks *are* a thing of the past, as I shall explain later. No longer do the “Big heads” hold sway, no more do they operate the living mechanism they created from their protoplasmic slime. But I am getting ahead of my story.

Once I had recovered from the excitement, the turmoil and the daze of my first introduction to the city and its life, and could coordinate my thoughts and take cognizance of the scientific aspects of my strange environment, I realized that the most astonishing phenomenon was the entire absence of heat. Not that it is cold. On the contrary, heat and cold being merely relative terms, in a place where there is no heat there can be no cold. Perhaps you cannot grasp this, for you and all humans, having always been accustomed to varying tem-

peratures, have come to regard heat and cold as essential things, as integral and inseparable factors of existence and of the universe. And it is, I admit, a difficult matter to convey, by mere words, the impression or I might say sensations produced upon me in a place where neither heat nor cold exist. If you have ever immersed your body in water of precisely the same temperature of your skin you may have a more or less accurate idea of the effect. But even that is not precisely the same. However, to proceed. It dawned upon me as something of a shock that in all this inner world, among these thousands of living, sentient beings, I was the only living being possessing warm blood and radiating a certain amount of heat. And later, when I had learned to converse freely with the creatures here, I learned that they had been more awed by the warmth of my body than by anything else. I can well understand how tremendously such an amazing, and to them incredible, condition must have impressed them. To find a living being, with a body radiating even a slight degree of heat, would be comparable to the wonder you and other humans would feel should you come upon a visitor from Mars or Venus, obviously of flesh and blood, whose body was of the temperature of red-hot coals. And that the Tsszor who found me should have so overcome its amazement and wonder as to transport me in its grasp to the city, speaks volumes for the efficiency and courage of the creature. But one of the attributes of these beings—regardless of their type—is their absolute fearlessness. They are wholly ignorant of what we call cowardice, dread, terror or fear. They possess more than what we of the earth have designated as brute courage. Theirs is not the courage of ignorance, the bravery of the beast who cannot foresee danger to himself, who cannot

reason, for these beings are intelligent and they possess keen reasoning powers. No, their immunity to fear is due to the fact that the cells in their brains which produce fear are wholly lacking. Yet they are perfectly aware of the fact that they can be injured, wounded, crippled and killed, that they can suffer agonies of pain. Unlike the moth who flutters into the flame and sings its wings, unaware of the danger and the results which will follow, these beings hurl themselves into battle, fully cognizant of the fact that they may be maimed or destroyed. But not knowing the meaning of the term fear, they have no dread of death, no terror of suffering.

In this respect they are callous, as unfeeling as machines. Yet they do not needlessly run risks of injury or death. And as heat is absolutely fatal to them, they possess a caution—it cannot be called fear—of heat above all else. Hence, as I said, I can appreciate how truly awed and amazed they must have been at finding me—a living being—not only surviving the heat of my own body but actually producing it. And while the temperature of my person is not great enough to injure these beings, still, even now, they keep at what they consider a respectful distance and when occasion arises and they have need of touching me, they do so with the utmost care and use such of their tentacles as are the least sensitive.

BUT I have again digressed—to go back to my exploration of the city. Having on that first day wandered through the streets, I turned my steps to the triangular areas which, I had decided from my aerial view, must be farms or cultivated land. Judge of my surprise when I found no land, no earth supporting the strange growths on these kitchen gardens. But, as I have already mentioned, the vegetation was all of

marine forms although terrestrial—No, I must qualify that statement. There *were* certain fungi. And the animal life represented was also distinctly marine. Many forms and types I recognized. The algae, corallines, bryozoans, corals, actinians, alcyonaria, etc. But there were also entirely new and strange fauna. Some doubtless merely highly cultivated varieties of native species, others unquestionably artificially developed by the same process used in developing the inhabitants of the city. But perhaps the most interesting and striking things were the live-stock, if I may employ that term in referring to the creatures. Here were the weirdest, most bizarre forms of life it is possible to imagine, veritable nightmares, yet presently I began to realize that few were real monstrosities, actual freaks, but merely highly developed and specialized varieties of the very marine life with which I was familiar. There, for example, were a number of the grotesque creatures I have described my seeing, when first I found myself in this inner world. But now that I watched the beasts, grazing on the aberrant coralines, I recognized them as gigantic "sea mice" in their anatomical structure, differing little from related species inhabiting the oceans of the outer world. Other creatures, which at first I had thought were true vertebrates—some species of porcupine,—I discovered were gigantic echinoderms—sea-urchins as you would call them—which had developed true legs and feet and had otherwise adapted themselves to a terrestrial habitat.

But it came as a distinct shock to find cephalopods, or octopods, living on land and crawling about like giant garden snails, for these terrestrial polyps were akin to the pearly nautilus, or perhaps more like the ancient ammonites, and bore beautifully colored shells. In fact after I had been studying the farms

for a short time I should not have been surprised to have seen winged crabs flitting about, nor fish running hither and thither among the stalks of budding hydroids. But the nearest approach to the latter was a most interesting and delightfully amusing herd of hippocampus.

Like the little sea-horses with which you are familiar, these possessed prehensile tails and tubular snouts. But through breeding and selection—so I assumed—the bony armor of the ordinary hippocampus had been eliminated while the fins had become transformed to wing-like appendages. Yet in their actions, their attitudes, their every movement they were still sea-horses, although as large as hares. I chuckled with laughter and delight as they moved stiffly upright through the air, their transparent fin-wings whirring like miniature airplane propellers, or, clinging fast to a plant stalk by means of their prehensile tails, they swayed back and forth, their big soft eyes and horse-like heads turning this way and that with the half-questing, half-dignified expression so typical of their tiny relatives of your world's eelgrass beds.

But I must cease dwelling on these domesticated beasts and plants. To do so is like a traveller devoting space to describing the cattle, swine and garden truck of lands he has visited.

AND here I may as well tell you something of the social organization of the denizens of this inner world, so that, as I proceed, you may more easily and clearly understand matters to which I shall refer.

Each of the various types of inhabitants is highly specialized, as I have said; but it was not until I had resided here for some time that I learned that each is specialized to perform certain definite duties. Thus the sole occupation of the

Cheek-horlks was to create, propagate and develop the various castes or type of the population, to rule and to be the brains of the community. The Iss-dors are the mechanics, the warriors, the industrialists, and are by far the least intelligent class. The Tss-zors act as a sort of flying corps, as couriers, scouts, police, and have charge of the commissariat. The Uk-kuls are the farmers and have charge of cleaning the city and are the builders or laborers. The Tu-jeers are the prototypes of our idle rich and act as inspectors, and as arbiters in cases of disagreements, while the Mo-hals are the fishermen and also have charge of the fresh water supply and the lighting of the city. Although I have, I think, forgotten to mention the fact, they possess both lungs and gills and are perfectly amphibious.

Having thoroughly explored the upper city and the farms, I turned toward the great tunnel in the cliff, for I was filled with curiosity to learn how and by what mechanism that torrent of water had been ejected to destroy the invading Ozmoks, and to determine, if possible, the cause of the glorious, multicolored aura that formed a dome of light above the city. That is, as well as the marvelous lights of the city, were produced, artificially, seemed incredible, yet I felt certain this must be the case. My first idea—that the lambent, flame-like city lights were produced by natural gas—had been discarded when I had discovered that the seeming flames were cold, or rather that they were devoid of heat. And as I felt positive that the magnificent, opalescent arch was of electrical origin I mentally decided that the city's lights came from the same source. Moreover, as I had seen no signs of any mechanical apparatus during my exploration of the city, and as obviously

the water, used to such good purpose during the battle must have been controlled by mechanical devices, I leaped to the assumption that the power or other plants must be near the opening in the cliff.

But as I approached the yawning, black orifice I saw no indications of buildings which might house machinery or electrical apparatus. Puzzled and even more curious than ever, I stepped towards the black hole, and instantly my guard of Iss-dors became greatly excited. They gathered about, squeaking and buzzing, uttering odd clicks and clucks. And when disregarding this, I moved nearer the aperture they reached out their finger-like appendages, and touching me gently, exerted a firm pressure which was unmistakably intended as an indication for me to turn back. Having by this time overcome my fear of the creatures, and rather curious to learn what means they might take to prevent me from following out my intentions, I brushed past the creatures. But I was not left long in doubt as to their actions. Without hesitation they seized my garments with their nippers, and dragged me forcibly away.

A moment later they halted, and two of the creatures raised one of the man-hole-like doors in the streets. I entered and descended. But instead of emerging in a circular chamber I found myself in a vaulted passage, and presently we came to a vast chamber. A single glance at the roof with its masses of stalactites assured me that we were in a natural cavern.

I could scarcely believe my eyes. I was speechless, dumb with amazement. The immense room was a hive of industry, a-quiver with the hum and drone of machinery!

The Weather Master

We have seen in afflicted America what the weather can do. It has devastated great areas of land in the western states and by dust storms may have ruined the farming country for generations to come. This story is based on what the weather can do.

By ARTHUR CAVE

IT WAS the most fateful hour of the Russo-American war, in the winter of 1980. The President looked gravely at his colleagues as he spoke the despairing words:

"Gentlemen, the situation is almost without hope!"

At that moment the door opened. The President looked up with a frown. He had given strict instructions that the War Council was not to be disturbed.

Jerningham, his secretary, was in the doorway. His eyes had a startled look.

"It is Professor Wilton. He insists that you see him!"

The meeting hummed with whispered talk. Professor Wilton had been America's leading scientist. Suddenly he had disappeared, on a Polar expedition. It was generally believed that he had died. A few people maintained that he had lost his memory, or gone mad, and was still alive.

"We'll give him two and a half minutes," snapped the President, placing his watch on the table.

Jerningham retreated and soon the Professor's figure was in the doorway. He had not changed in the years of his absence. His enormous bulging forehead, as smooth as an egg, glistened above his shaggy eye-brows. He wore an old tattered rainproof and limped into the centre of the room. The door closed after him.

Professor Wilton looked round the table at the famous faces. Each one was

tense, and each was strained with anxiety.

"I see the truth in your faces. America is in danger, great danger!"

Bardell, emergency War Minister, once Wilton's greatest friend, nodded. "Yes, Wilton. What can we do? These long range bombers which Russia has been secretly developing have been striking incessantly at our centres of population. Her first surprise attack on Alaska wiped out our own advanced bases. In any case we had no airplanes able to carry a load of bombs to Moscow and return. Even our defense is disorganized by the fact that Russia's new atomic motors make her bombers faster than our pursuit planes.

The Professor seemed unperturbed. He seemed almost pleased that matters had turned out as he suspected. "Precisely as I thought. So I have come here to save my country."

"Save us! What do you mean? Is the Pro. batty?" The politicians were unanimous in their wonder at the Professor's calm assurance.

Wilton tossed his hat casually on to one chair and sat down on another.

"Time is short. My explanation must be brief. Listen then! In my long absence I have probed the secrets of the weather. I have mastered them. And with this mastery goes the mastery of the Northern Hemisphere. Leave everything to me. Keep every airplane on the ground, every battleship in harbor, every soldier at his base. I, and I alone, will fight Russia for you and conquer."



He jumped on the shattered glass, a pistol in his hand. The Professor turned, and his face was distorted with passion. . .

The Treasury Secretary's voice rose clearly above the buzz of talk that ensued.

"The poor old fossil's wandering. Ring for somebody to see him out."

Wilton turned on him with a scowl. The rubicund and genial politician wilted before the cold scorn of the scientist.

"You fool! You think I am mad? And even were I mad, could I have made a greater muddle of affairs than you have, for all your sanity? I expected to encounter this attitude. So I have prepared a sign. Before I left my home I arranged there should be a torrential downpour upon Washington." He pulled out his watch. "It is due ten minutes from now."

The sky was blue and devoid of clouds. Wilton, an abstract expression on his face, stood at the window, waiting, his watch in his hand. The others whispered among themselves for a minute or two, then relapsed into silence. Suddenly the Finance Secretary gave a cry of surprise.

"Look! Clouds! And it's getting darker."

The Professor made no reply. He stood like a statue, waiting. Ten minutes passed . . . Then he raised one hand.

Outside could be heard a steady patter. It rose to an uproar. Water beat against the windows of the White House. The gutters gushed with rain. The Secretary of the Treasury rushed to the window. Washington was almost invisible through sheets of rain.

The War Minister jumped to his feet. "Wilton has proved his point. He can control the weather! As he says, he is our master. Leave it to him. I've known him of old. He would never claim an ounce more than he was certain of being able to do. Trust him! Keep our airplanes on the ground. Withdraw our ships into harbor!"

The President shook his head. "It's no good, Tom. Such an action would

be fantastic. I'm ready to believe the Professor is an exceptionally gifted weather forecaster, and knew of this impending downpour. But to control the weather is beyond the bounds of scientific possibility. However, I will put the proposal to the vote."

The War Council turned Wilton's proposal down with one dissentient voice.

Scarlet with passion, the Professor seized his hat.

"Very well! I shall convince you in spite of yourselves. I must now prove my power more drastically. Starting from early to-morrow morning, I propose to immobilize the United States. Of course I shall take care to do it in such a way that Russia cannot harm her during the period. Good morning, gentlemen. I shall leave my address with Jerningham."

Next morning the Great Fog began. All over the States, over the Pacific Coast, and over the North Atlantic seaboard the mist spread, impenetrable and clammy. Vast stretches of country which had never known even an hour's heat mist, were buried beneath a rolling sea of fog as thick as ever lay off the Newfoundland Banks. Never in meteorological records had there been so extended a mass of vapor. A pilot, ascending at the risk of his life in a dirigible, reported that it was several miles in depth; probably extended up to the tropopause. Not a square mile of the United States was clear.

The whole country was immobilized. Not a train moved. Trucks and autos were abandoned everywhere. Hundreds of thousands of pedestrians were lost for hours. No one was at his office. The whole telephone system was thrown out of gear by the number of emergency calls made by stranded people. Business was impossible except in a sketchy, provisional way.

The Great Fog continued all day and as night fell showed no signs of shifting. Only forty ships put into harbor that day on both seaboard. All the rest were stationary at sea, from the Gulf of Mexico to the St. Lawrence, and scattered over the Pacific.

The War Council was hurriedly summoned. A special corps of messengers, equipped with powerful red lights, guided the executives through the streets of Washington to the White House. The President's words were few.

"We were wrong and Wilton was right. I have spoken to him and apologized for our misjudgment. It seems to me that we must place ourselves in his hands for directly the fog lifts, Russia will strike. The orders to the Commander-in-Chief of our Forces and to the various police chiefs are all here in draft. You have only to approve them. After dawn to-morrow no American subject, soldier or civilian, is to stir."

That evening a warm west wind blew and rolled back the fog from the Pacific to the Rockies. At midnight a north wind scoured the central plains and, before dawn came, an east wind blew away the last banks of fog between the East Coast and the Alleghenies. Morning showed a perfect sky, blue and sunny.

* * *

Propokoff, Russian Commissar for War, was studying an opaque sheet of glass, lit by a suffused glow, which was placed upright in front of his desk. Over it a swarm of black specks appeared to be crossing from left to right.

These specks represented the huge Russian aerial fleet, loaded with hundreds of thousands of tons of high explosive, making for their two objectives—Chicago and New York. Both towns were to be entirely wiped out in the first movement of the decisive aerial offensive which had been planned for

the massed Red air fleet of atomic-engined bombers.

"Very strange," murmured the Commissar Propokoff with a puzzled frown, as he crumpled up a radiogram and hurled it into a wastepaper basket. "America is making no attempt to defend herself. Has she gone mad?"

"Perhaps there is a general strike of the military forces?" suggested his assistant. "Our agents have been working hard to produce one."

Suddenly the Commissar gave a startled cry of amazement. "Look at that! What has happened?" He bent forward and stared at the glass screen.

The specks that were airplanes had suddenly bunched into a confused mass and were now moving in the opposite direction.

The Red Air Force was retreating! But from what? Desperately Propokoff scanned the televisior screen. There was not a trace of an airplane within a thousand miles. And the fleet of planes was still over Russian territory, two hundred miles from Vladivostok.

The next minute both the watchers paled. The Russian bombers were being tossed about like flies. Then, as if struck by some giant hand, they fell, not together but spasmodically. Here a pair of wings fell fluttering. There a tiny tail floated down towards earth. Men could be seen in the air, struggling, attached to parachutes. But every now and then a parachute would be torn to ribbons, and its helpless pilot would fall sheer, hurtling over and over in ghastly somersaults as he dropped.

Almost simultaneously a loud speaker in the room, after a preliminary splutter, burst into a raucous calling.

"Emergency message for the Commissar of War. Outpost of artillery No. 569 BX. speaking. A dreadful tragedy has overwhelmed the Red Air Fleet. In perfect weather conditions it was pro-

ceeding towards Alaska when without the slightest warning a line squall was seen forming ahead. The leader of the formation turned back. Moving at enormous speed, the line squall overtook them. The vertical currents in front of the line squall were the most violent ever recorded. Roofs and paving stones were lifted several thousands of feet. The wings of the heavily loaded high-speed bombers were torn off by the hundreds. Tails and fuselages collapsed under the stresses. Only a few bombers survived the few minutes during which the front of the line squall passed through the Red Air Fleet. These few were forced down and smashed by the descending currents in the wake of the squall. Hundreds of our best pilots have perished. Terrible havoc has been caused by the bursting of the bombs carried by the crashing planes."

The Commissar sank into his chair. With a trembling hand he wiped the sweat which had broken out on his rugged brow. The hand trembled slightly.

"I can't believe it," he groaned. "It's a well-known thing that a line squall, deadly though it is to aircraft, can always be predicted hours ahead. And all our forecasters agreed that the weather from Moscow to Alaska would be perfect during the next twenty-four hours."

The Assistant Commissar smiled grimly.

"Indeed. And if that's their forecast, can they explain this?"

He jerked a thumb in the direction of the window.

Snow was falling heavily.

* * *

All that night the temperature through Russian dropped. Strangely enough, it remained mild and clear over the rest of Europe. In Russia snow fell, steadily, incessantly, and it was accompanied by blizzards which prevented anyone stirring

out of doors. The temperature dropped continuously for hours. In southern Russia it was as cold as the average winter temperature of Arctic Siberia. All day, and all night, the snow ploughs worked on the Russian railways, but their task was hopeless from the start. The snow fell so steadily and thickly that before the snow plough could return the tracks were covered again. And all the time gales were howling.

The Russian authorities made stupendous efforts to deal with the situation. They were used to snow, and believed it would only be a matter of time before they got the situation in hand.

Meanwhile the United States was like a land at peace. The Army, Navy, and the Air Corps rested. Citizens went quietly about their normal business.

The world was astounded. Here America had Russia at her mercy. Yet she made no attempt to attack.

But the President kept his word. If Wilton could achieve victory without shedding another drop of American blood, so much the better.

One morning a hurricane, blowing from the East, pushed up the ice floes against the ice-locked Pacific fleet in Vladivostok harbor and crushed their largest vessels like matchboxes. They sank in the harbor in two hours. Two days later, most of the Baltic fleet was destroyed by a similar catastrophe.

These events seemed less serious to the Russian Government in the face of more pressing problems. The snow was now several feet deep all over Russia. The food problem was serious. Masses of troops, their communications severed by the snow, were starving. Their messages for succor became frantic.

When an American mission arrived and told the Russian authorities that the weather was of their making, they were derided. "Those mad Americans!"

Whereupon the head of the Mission offered them a few practical tests and got into telephonic communication with Wilton.

Next day the astonished inhabitants of Moscow were treated to the most amazing meteorological display in the world's history. But they were too frozen to appreciate it.

First there was thunder. Then the sun shone intensely. Almost immediately it vanished, and the sky was covered with ragged clouds, which changed to piled masses of cumulus, as the wind alternately backed and veered, and eventually fell to a flat calm, after having blown from every point of the compass. The calm was succeeded by an intensely local tornado which raged for two hours. This was followed by a mist . . .

The Russian authorities were convinced. The articles of peace were signed in the Kremlin and provided for the surrendering of all war equipment and the disbanding of existing armies.

On his side Wilton promised not to restore the warm weather suddenly. Otherwise the melting snow would have flooded Russia. Imperceptibly the temperature rose. Gradually the snow melted. In a few weeks all was normal again.

* * *

"I have fulfilled my promise!" said Professor Wilton. "As you will admit I have saved the United States." The Professor spoke without emotion, as if he were stating precisely the results of a simple experiment. "Now I come to claim my reward."

"Of course!" exclaimed the President. "You have deserved the utmost our grateful nation can give you."

"But first tell us how you wield this amazing power," interrupted the Secretary of the Treasury. "As we promised, we have not asked you before. But I am intensely curious about it. I must admit that what you have done so easily still

seems to me to be beyond the power of man."

The Professor smiled coldly.

"It is comparatively simple. Scientists have always suspected that weather conditions over the Greenland Ice Cap controlled the weather of the Northern Hemisphere. One scientist calls it 'The North Pole of the Winds.' I found this to be really the case. For ten years I studied the secrets of the Greenland Ice Cap until I had mastered them. I found that a certain type of depression in Greenland produced (say) snow over France. A south wind of a certain strength produced north-westerly winds in the Quebec region. Of course it was far more complicated than that, since the number of variables included not only wind-strength and direction, but also temperature, pressure, humidity, structure of the upper air, temperature gradient, and so forth. But I want you to grasp the idea that ten years of observation showed me that a certain arrangement of weather over the Ice Cap invariably coincided with the same weather distribution in the Northern Hemisphere."

"I grasp that," answered the politician. "But how did that given you control of the weather?"

"I spent my whole personal fortune in secretly building gigantic power stations on the hitherto unexplored Greenland Ice Cap. I harnessed the sun's rays and the volcanic energy of that region by means of reflectors and sunken pipes. It is the largest heat-power station in the world. By controlling the output and direction of the heat and the melting of the Ice Cap I can control the local weather structure on that area, for as you doubtless know, the energy which produces weather-change all derives ultimately from heat. This local weather in turn controlled the weather in the Northern hemisphere as far as the

region of the trade winds, in which region other factors, notably the earth's rotation, dominate the weather make-up. Thus in effect I master the weather. Of course I cannot produce impossibilities such as clockwise cyclones in the Northern Hemisphere, but I can, and have, produced tremendous local concentrations of certain types of weather. To understand the principle, you must regard the Greenland weather system as an enzyme, or rather a hormone, producing tremendous changes in the whole organization of the weather, not by direct mechanical action but by a subtle interaction."

"I think I grasp this dimly," remarked the President, "but how can you, here in America, or in Russia, obtain such quick responses?"

"None of my assistants understands the machinery of the weather control, for it involves abstruse mathematics which only six or seven living people have the equipment to follow. But they know how to work it. It is all controlled by a simple-looking dial showing the general type of weather, to which a pointer can be rotated. Another pointer is to be moved over a model of the Northern Hemisphere to indicate the region. The pointers are connected to a complex system of integrating and differentiating linkages, which mechanically solve difficult equations and select the different basic patterns of local weather to produce the conditions required. I radio the necessary weather to my assistants in code, and they produce it. Therefore, wherever I am, I can call for different weather in a few minutes, though naturally there is a time-lag varying according to my distance from the place."

"It sounds simple when it is explained," commented the President. "And so you wield this tremendous power. How fantastic it seems! Now let us

come to your reward. I may say that I have already proposed that you receive the Congressional Medal, be given the public thanks of both Houses of Congress after a procession through Washington, be granted immunity from all taxes during your life, and be voted a pension of five million dollars per annum."

The President paused. He knew, and his colleagues knew, that no subject of a modern State had ever been offered such rewards. Even the honors showered on Wellington by England after the battle of Waterloo seemed childish after this.

The Professor was silent for a long time. Then he smiled acidly.

"My terms, gentlemen, are a little different. I have performed my part and I demand two things in return. One, to be made Federal Governor of the United States, replacing the President, and with my powers defined in an amendment to the Constitution. Such powers are to be give me supreme authority in all Federal matters. My second demand is that I receive, to my own personal use, free of tax or deduction, one quarter of the Federal Revenue, which should, I imagine, amount to one thousand million dollars this year."

There was a shocked silence. It dissolved into a babel of horrified protest.

It was the President as usual who acted. Getting to his feet, he pointed a menacing finger at the Professor.

"I arrest this man on a charge of treason, on the grounds that he proposes to overthrow by duress the Constitution of this country. I charge you all, on your duties as American citizens, not to let him leave this room."

"Do you think I came unprotected, you fools!" answered the Professor shrilly. He drew from his pocket a weapon that resembled a revolver in shape, but was made of glass. A steam-

ing liquid squirted from the barrel into the faces of the members of the Council. One after another, even as they rushed at him, they fell unconscious to the floor.

Wrapping a scarf tightly around his mouth, the Professor hurried from the room. Ten minutes later, while the President, recovered from his unconsciousness, was telephoning the Department of Justice, Wilton was stepping into his high speed autogiro. A few hours later he was over the ocean en route to Greenland. As he flew he issued hurried orders to his assistant by radio.

In obedience to them a thick bank of fog steadily rolled up behind him, covering his retreat. The Navy Air Corps machines sent to catch him turned back, baffled.

* * *

All over America that night the Professor's voice was heard by every radio listener. Any attempt to drown it by Government stations was answered by local thunderstorms which put the transmitting stations out of action.

"People of the United States," announced the Professor. "The Government has refused to accede to my just demands. For one week I shall immobilize the country. No one will be harmed. But if my just demands are not then met, I shall unleash the fury of the atmosphere. In seven days' time sporadic lightning and tornadoes will begin. They will gradually become continuous and merge into an incessant rainfall, which will in time wipe out the population of the country."

Even as he spoke, the Great Fog was once more rolling over the American Continent. By nightfall the beating heart of the country was again frozen in the grip of that impenetrable vapor leaving mankind blind and baffled.

Bernard Lane, resting after days of excited work, jumped to his feet when

he heard the announcement and saw the fog which followed.

"My chance! What luck!" he exclaimed. "The invention I have been working on may be able to save us!"

He was then in Chicago. From that city he 'phoned to the President, who knew his name as the recipient of a Government award for a new form of aerial torpedo. The President was persuaded to see him.

That was in the morning. In the evening of the day he was in Washington.

The President was astonished. "How did you get here?"

"Auto," was the quiet reply.

"What! You must have averaged an enormous speed. Impossible, surely, in this fog?"

"It would be impossible without my invention. It is an infra-red ray 'eye' fitted on the front of the automobile hood and in circuit with a pair of viewing glasses worn over the eyes like spectacles. With it one can see normally in fog."

"If only every one of us had that apparatus," groaned the President.

"One is enough," replied Bernard Lane grimly. "Give me a pursuit ship. I have a pilot's license. I'll settle accounts with Wilton."

* * *

All night Lane flew through the fog. Darkness or fog made no difference. He followed the coast to Newfoundland and then steered for Greenland's Ice Cap, which was deep in dense white fog. In the viewing glasses however it stood out clear and distinct, and Lane found Wilton's aerodrome and landed on it without difficulty.

Near it, easily visible through the viewing glasses, was the huge Observatory, with its maze of shimmering pipes. Above them were the huge conical reflectors, of shining copper. Wiring festooned itself around the piping, and

the whole vast structure looked like some strange, exuberant, vegetable growth mimicking a mechanism. The ground vibrated with the steady throb of a subterranean pumping engine.

Lane toured around the building. Presently, in what he took to be the glass-windowed control-room, in the vast central block, he saw the Professor, carefully examining an instrument board.

Seizing a large stone, Lane hurled it through the window. He jumped on the shattered glass, a pistol in his hand.

The Professor turned, and his face was distorted with passion as he realized that he was menaced.

"Move a finger and I'll drill you full of lead," exclaimed Lane, moving slowly towards the instrument board.

The Professor remained immobile, his eyes fixed watchfully on the other. Slowly his foot stole back. Lane was watching his hands and eyes and did not notice the hidden movement.

Stealthily the Professor pressed a lever with his foot. Almost immediately the room was filled with a choking gas. In the confusion the scientist, with a scream of animal fury, leaped at an enormous lever which was protruding

from the opposite wall. It was done.

Too late Lane realized his object. He shot twice, but the Professor had already pulled the lever. Immediately afterwards Wilton slumped like a sack of coal, dead. As the lever went over there had been a crackle of sparks. This was followed by a strange silence. Then the sky reverberated with the most appalling peal of thunder Lane had ever heard. The whole Ice Cap was wrapped in a violent and incessant discharge of lightning. This discharge continued for ten minutes, while the thunder rolled like a bombardment. Observatory, power stations, wiring, all were reduced to fragments and the molten metal ran sizzling down the vast slopes of the Ice Cap, gouging a deep fissure as it ran.

Four days later Lane, the only survivor, was found in the ruins, unconscious, but still breathing. He recovered.

The Professor's weather control apparatus perished with him. No one was able to grasp the subtle laws on which it functioned. And the world, realizing the terrible power over humanity which went with the control of the weather, considered that this was well.

The End



In the Realm of Books

Conducted by C. A. BRANDT

GOD'S SECRET. By Arthur Stanwood Pier.

Published by Charles Scribner's Sons, 597 Fifth Ave., New York. 327 pages. \$2.50.

Immortality is the theme of this book, but so far no one has written a really good "Immortality" story. The million and one complications, which would arise, should humanity become immortal all of a sudden, are too vast, too difficult and too varied, to even allow cataloging, to say nothing of solving. Like all other stories having Immortality as a basis, this story too, falls down heavily when it comes to producing logical explanations of the effects of sudden "Immortality en masse." However, the author did a very clever thing. He first put the world in order, that is he laid the time of the story in the year 2000, when the world had become a veritable Utopia. Thanks to President Dobbs, elected in 1976, the world was a very good place to live in. A constitutional amendment, which the President had sponsored, automatically made the government a third part owner of every important industrial enterprise. This enabled the government to pay wages to every one, who was unemployed, or otherwise suffered through the continually mismanaged industrial concerns. (Unfortunately, Mr. Pier does not tell us how they got rid of the thieving politicians, which are, have been and will be the ruin of any nation.) Hand in hand with the abolishment of poverty, goes the eradication of all diseases, and at this time, when Life was really worth living comes the startling discovery of Dr. Henry Lattimore, who announces to the world at large, that he has perfected a serum which eliminates Death, and that this serum will be available to every one, practically free of charge.

In a relatively short time, almost the entire population of the civilized world is immortalized. Nobody dies except by accident. Now complications set in, a terrible economic depression and crisis occurs, the like of which had not happened since Capital had control of the destinies of humanity. Many occupations and trades became obsolete, unnecessary or were in such slight demand, that they became negligible. Doctors—nurses—undertakers and people working in allied industries became destitute and were obliged to apply for relief. Food riots broke out everywhere and it appeared impossible to readjust conditions to a normal state. Besides an enormous number of other vital questions cried for speedy solutions. Property laws were found in need of

readjustment, since nobody died; everybody held on to what they had. The spirit of helpfulness disappeared completely and egotism of the worst sort ran rampant. Then there was the ever increasing spectre of an over population, though the prospect of an eternal union *ohas* marriage, had a wholesome influence on the birthrate. Aside from all this, a very natural mental aversion against eternal life manifested itself: everybody was bored with life to such an extent, that the "Euthanasia Trust" which provided places for pleasant, painless, and speedy self-extinction, became the most prosperous concern in the world. And so on and on, until the reader is thoroughly "up in the air," since the author does not show a way out of the mess he has created, but just the same "God's Secret" is a very interesting book.

A Very Fine "Fantastic Adventure and a Lost Race" Story

DIAN OF THE LOST LAND. By Edison Marshall. Published by H. C. Kinsey & Co., Inc., 105 West 40th St., New York. 269 pages. \$2.00.

The "lost race" has been the theme of many an interesting story and the subject of this discussion, "Dian of the Lost Land," is one of the best stories of that type I have read. A statement by Commander Byrd furnishes the key to the book (it may have suggested the very idea of the book to Mr. Marshall): "Somewhere in these tremendous areas, there must be lowlands where the temperature rises sufficiently to permit vegetable and animal life . . . In some Antarctic valley, perhaps hemmed in by towering mountains, a thrilling discovery may await us."

Dr. Adam Weissmann, a typical blond Nordic (in spite of his name) is doing research work in Sidney, Australia. He is investigating the causes, etc., of "Coral Fever," a rare and always fatal subtropical disease.

One night, a big burly, Danish sailor calls at his laboratory, and requests him to go with him to a certain sailing vessel and examine a sick man. A description of the symptoms points to coral fever. Aboard the vessel he meets Karl Belgrade, a world famous Ethnologist and Anthropologist, who tells him that he is aboard the "Penguin," which was supposed to have been lost with the ill-fated Gilbert expedition in 1908. Belgrade, a cold blooded, ultra-selfish scientist, informs Weiss-

mann that it is of paramount importance to keep the sick sailor alive, until he has shown him the way to the lost race, a mysterious people with whom the sailor has lived for many years. Weissmann refuses to go along so he is shanghaied. After an uneventful voyage they reach a certain point, from which they propose to reach the lost race by plane. The sick sailor dies, after imparting to Weissmann all his knowledge of the route to the lost race, and Belgrade is forced to take Weissmann along. They find the lost race, a tribe of magnificent blond savages, and surmise after a few days that these blond savages are the last remains of the famous Cro-Magnons, who dwelt in Southern Europe about twenty thousand years ago. Through all these years, they have kept their blood untainted by constantly weeding out all those who did not conform to the racial standard, which for males was not less than six feet tall, clean limbed and blond. They have clung to their old tribal customs, and their language was probably the old Cro-Magnon speech, which apparently contained the root forms of many words of our modern languages.

The tribe is ruled by Dian, a tall, lovely girl, whose father was Morrison, the other surviving member of the Gilbert expedition. Dr. Weissmann, being a blond, is received with open arms by the tribe, and the Doctor promptly falls in love with Dian. Belgrade, who is swarthy and black haired, is forced to associate with the black haired contingent of the tribe, who are virtually the slaves of the blondes.

Weissmann reverts back to type and goes Cro-Magnon, and slowly but surely makes up his mind to remain with the tribe, whose chief he will become when he marries Dian by saying "the old words" before the sacred fire. Belgrade wants to fly back to the waiting "Penguin" and acquire credit in the scientific world by publishing his discoveries. Weissmann finally convinces him that this would mean the end of this splendid race, and he finally consents to keep silent.

The author gives us very vivid descriptions of the tribal life of the lost race; we see a mammoth hunt at close range, in which Weissmann distinguishes himself considerably, etc., etc. Suddenly, disaster looms. It seems that, ages ago, when the Cro-Magnons wandered over the then existing land-bridges, connecting the various continents a tribe of "Og-gree" (*Homo Neanderthaliensis*, *alias* Ogre) travelled the same way, and finally settled somewhere in the far neighborhood. The "Og-grees" had made occasional attempts to annihilate the Cro-Magnons, which attempts had always been frustrated so far. Word arrives in the village that a large force of "Og-grees" is on the war path, and the tribe prepares for battle. Through bad tactics, the temporary ad-

vantage obtained by an attack by the Cro-Magnons' tame white wolves is not followed up properly, and the Og-grees remain where they are. Then Weissmann and Belgrade, arrayed in flying costumes, whose aspect, terrifying to the Og-grees, are amplified by blazing torches, bluff the Og-grees into a complete retreat.

Belgrade prepares for departure. Weissmann has definitely decided to remain with Diane, feeling that racially and emotionally he belongs to the Cro-Magnons and to her. Belgrade takes off, promising to return in a few years.

"Dian of the Lost Land" is a most interesting and thrilling yarn. I heartily recommend it to all our readers.

THE MICROBE MURDERS. By Frederik G. Eberhard. Published by the Macaulay Company, 381 Fourth Ave., New York. 255 pages. \$2.00.

Ye scribe gets exceedingly tired at times of reading countless manuscripts of stories, which really should have remained unwritten, and in such a low state of mind, produced by the above mentioned efforts, he turns to murder and mystery stories for relaxation. Alas and a couple of alacks—for here he finds the same conditions—most of them should never have been written, much less printed. However, occasionally a good mystery story is encountered, and in my opinion the "Microbe Murders" is a good one. Like all good mystery stories it is somewhat involved, therefore a comprehensive synopsis would be somewhat difficult, besides it would spoil the pleasure of the readers. Let the following suffice: Professor Larkin, Egyptologist, is found murdered in his private museum. Not only murdered but embalmed as well, according to the best known ancient Egyptian methods. For quite some time past, the entire community has been upset and baffled by mysterious murders, all of which had been accomplished by the use of virulent germs, producing cholera—bubonic plague—tetanus, and other decidedly unpleasant ailments. The Professor's adopted children, now a young man, and a young woman, find themselves cheated out of their expected large inheritance, since the valuable gem collection goes to the Professor's Egyptian assistant, his life insurance to his brother, a notorious confidence man, they receiving only the residue consisting of the house and some cash. The adopted son dies suddenly of bubonic plague. A burglar, who is trying to open the professor's safe is murdered, likewise the Egyptian assistant, who is found pinned to the wall with an old bayonet. An attempt is made to eliminate one or more of the investigating officers *via* typhoid germs, and Doris, the other adopted child, an unlovely young woman of mannish appearance, is found to be a leper.

Very surprising solutions to all the well de-

veloped riddles is given in the last chapter, the murderer, responsible for all that has happened is discovered, but I won't tell you, who is who. That you have to find out for yourself, and if you like hair-raising stories read: "Microbe Murders.

THE MONKEYS HAVE NO TAILS IN ZAMBOANGA. By Captain S. P. Meek. Published by William Morrow & Company, 386 Fourth Ave., New York. 288 pages. \$2.00.

Captain Meek is no stranger to this magazine, which printed several very fine science fiction stories written by him.

I am quite sure that our readers would like to know that Captain Meek has written a very enjoyable book, combining science and humor to perfection. It is a very funny book, in fact hilariously so. It is a collection of short stories, describing various experiences of the ever thirsty Provost Sergeant. The book is dedicated to Mrs. Meek, whom the Captain accuses of being a centipede, she having wangled his consent to stock up on shoes, which she claims to be able to buy at an enormous saving, on account of there being a sale. So she buys a dozen at fourteen fifty a pair. Confronted with a shoe bill for almost two hundred dollars, the Captain gets busy, turns on the imagination, and the Provost Sergeant tales were the result. Let us hope, Mrs. Meek reacts likewise to a sale of fur coats which might induce the captain to write some science fiction stories extraordinary.

The book gives us fourteen much varied yarns of which the best are:

The tale of the fellow who crosses carrier pigeons with parrots, so that they can deliver all messages verbally. Unfortunately, the parrot-gens croak when they are compelled to learn Russian.

The tale of the fellow who fed cocoa beans to his cow to produce milk chocolate and by another diet very potent milk punch which business was unfortunately stopped by the prohibition agents.

The tale of the corset bearing geese, where the tight lacing produced a superabundance of enlarged geoselivers, which were partially removed surgically with the aid of an ingeni-

out zipper arrangement so that the geese did not die.

The tale of the perfect camouflage. In this yarn the silk worms are made color conscious and finally selfcolored. Changing silk is produced which changes its color in harmony with its surroundings a la chameleon.

All throughout the stories the army comes in for some very tall kidding. A very enjoyable book indeed.

THE EMERALD BUDDHA. By Elizabeth Morse. Published by E. P. Dutton & Co., 300 Fourth Ave., New York. 320 pages. \$3.00.

The author of "The Emerald Buddha" lived for many years in Bangkok, and in her book we get a great many highly interesting sketches, of what life is like in Siam. Not only that of the natives but particularly that of the foreign colony whose members are the chief characters in her book. The entire story revolves around a statuette of Buddha said to be composed entirely of emeralds. There exist two plots to steal said Buddha and one gang of plotters headed by one Wong succeeds, which naturally is very distressing, indeed, to the other gang. Mr. Wong is the secret husband of Madame Fontaine, a handsome but mysterious lady, liberally hated by all the other women of the foreign colony. The theft of the Buddha following the death of the beloved old king almost leads to riot and bloodshed. The timely if accidental intervention of Nils, the Finnish engineer of Bangkok's electric light plant, restores the stolen Buddha to its proper temple and Siam again is peaceful.

"The Emerald Buddha" is a very agreeable book, particularly to those who do their travels vicariously, seated comfortably in an armchair next to a highball or radio or what have you.

The only thing I did not like about the book, were the wealth of Siamese words and phrases which were only partially explained now and then. Miss Morse should read some Kipling, who has mastered the trick of explaining foreign language words in the accompanying text, so that the average reader is flattered and surprised at his knowledge of foreign and strange terms. Kipling's system does not leave the reader batty.



DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

A Most Interesting Communication from a Much Admired Author.

EDITOR, AMAZING STORIES:

Archeology is one of the most fascinating of sciences, because it is one of the most uncertain. From a few clues, physical, circumstantial, and mental, the scientific detective deduces the story of a crime.

In America, years—during which Europe was living written history—are shrouded in mist—a few hundred, a thousand or two. In the ancient belt of fertility between Egypt and India, and in the once-fertile land north of the Himalayas, archeology is drawing history back five thousand years or more. "The People of the Arrow" deals with a lot of imaginative history twenty thousand years before that.

Let me sketch very briefly the background of firmly founded conjecture on which the story is based. During the Pleistocene age of the geologists—the age of the great mammals, glaciers covered the world, advancing and retreating from and to the arctic and antarctic zones and from the high mountains. For hundreds of thousands of years during this glacial age a race of men inhabited Europe and Asia—men that some have said were not men—Neanderthal man. Scientists think that he was another species of man than *Homo sapiens*, as lions and tigers are different species, or gorillas and chimpanzees.

During most of his stay in Europe, Neanderthal man was in a very primitive state of culture or civilization. He had certain very definite physical characteristics that modern man has not: huge brow-ridges, permanently bent knees, a C-curved spine are a few. He lived along the banks of rivers, in the open, and chipped flint weapons that gradually fall into a few characteristic classes. The "coup de poing" or hand-axe is the best known and most striking of these—a huge oval blade of chipped flint with a smoother holding-place for the hand. Finally the glacier drove Neanderthal man into the shelter of the forests and made him a cave-dweller. By now his flint-work was better than most men of today could do—quite far advanced, in fact. He buried his dead, with equipment of sorts for an after life. This last stage of Neanderthal culture, which lasted until the glacier receded again, is called the Mousterian stage, named, as almost all such stages and races are, after the place where it was

first discovered or which is most typical of it.

Twenty or twenty-five thousand years ago modern man appeared in Europe. Archeologists, hampered by political boundaries which did not exist ages ago, are busily working along his back-track. Some, and in the end it may turn out that there is truth behind many of their statements, claim that he came from Atlantis, the legendary continent which was supposedly submerged about that time. Others think that as the glacier receded into the north the rain-belt moved with it, and the Sahara plateau region, once fertile and grassy like the western plains of America or the steppes of Asia, began to grow arid. The present drought conditions illustrate on a small, sudden scale what it took centuries to bring about. Game moved away toward the lowlands and the hunters living there followed by the easiest routes—into southern Africa, into Egypt, into the Mediterranean basin.

These men were like modern men, but taller, with bigger heads. Their women had bigger brains than the average man of today. They were artists—sculptors, engravers, painters. They painted the woolly mammoth and woolly rhinoceros—in fact, all the animals familiar to them but mere conjectures to us, until the paintings were found—on the limestone walls of deep caverns. They worked flint in a different way from the earlier Neanderthal race, and used bone for various things, ornamental and useful. They are called, in France at least, and pretty generally wherever they are found in Europe, Cro Magnon men, after another little village in the French hills. Many books, romances as well as more solid works, have been written about them. Many more will be, for they were a wonderful race.

The Rhone valley is a gateway from the south, leading up into the plains of central Europe where deer and bison and wild horses roamed in enormous herds. Up that valley, so the evidence seems to show, Cro Magnon men came, following the retreating ice. In France, and in the rest of Europe where there was game and shelter, the Neanderthal men were reaching the peak of their slowly evolved culture. The Cro Magnon men—Aurignacians they are called at this early stage, after the name for this period in their culture—were just beginning theirs. The two races, different as day and night—far more different than any two existing races of man—met. For centuries

they existed together. But not peaceably, for in the end, Neanderthal man disappeared from the face of the earth, forever.

I have tried to imagine one of the first meetings between these two races. The Neanderthals had learned or been forced to eat human flesh, during the rigor of the last advance of the great glacier. They were stooped and misshapen. It is doubtful if the two races of men could interbreed; certainly evidence for such mingling is scant and shaky, and the psychological evidence all against it. It must have been war from the first—bitter war, between dwellers in the open, strong, handsome, clean-limbed, and the cramped, stooped, cunning beast-like men of the caves and forests. In the best caves the Cro Magnon remains, in all their various stages of development, almost up to the beginning of historic times, lie on top of the debris of the other men whom they drove out. In other places neighboring sites seem to have been occupied at the same time, like enemy cities, by the two races. It is all very complex and circumstantial, and half a century covers most of the study by competent scientists. It is a study that has grown up with the students. Catholic priests, the only men in their parishes with sufficient education and intelligence to realize the worth of what they saw, have contributed a great deal. Doctors, small-town lawyers, retired business men—it is a varied guild. Each knows by experience, not from the relayed opinions of books. Each has gone through the painful process of finding and seeing and interpreting for himself. There is no science so difficult, in which invaluable evidence, without duplicate in the entire world, may be lost or rendered meaningless through ignorance or carelessness. Yet it is almost the only science in which the amateur, earnest and keen, and willing to do the right things in the right way, can render important service.

This last paragraph may have seemed to border on an oration. I have wandered away from my sketch of the background of my little story. But it is important that just such an oration should be made to people who have felt the thrill of science and wish to speed it on its way. Europeans, for the most part, have become educated in this respect—at least those who will read *AMAZING STORIES*. In America it is different. Prehistory has seemed shorter here; it is the history of one race or portion of a race, not of many races. Literally hundreds and thousands of collectors have gathered together cards and cabinets and shelves of "Indian relics," because they looked nice, because they were interesting, but almost always without regard for the story they told. Our advantage in dealing with a period of tens of years instead of hundreds, with centuries instead of geographical ages, has been largely lost. Mounds have been dynamited as the

climax of an excursion. Sites of villages or cemeteries have been looted by pot-hunters who advertise "axes, very nice, \$5.00." or "genuine arrowheads, all different, 5c each." Even here in New York State where Jesuit reports overlap forgotten villages of the Iroquois or the Algonquins, there is a tangle that will take a lifetime to unravel, though it is being done—and amateur collectors who have become reasoning scientists are doing it. This is because the attention of museums and universities has been turned abroad, or to things a little more spectacular than an Algonquin fishing village buried under the sod of a disused pasture.

Archeology in America has seemed a matter of a few thousand years. That may be why interest in it has been so slight. It has been entirely the story of the Indian, of one tribe or another, one linguistic family or another, one century or another, with a scattering of mysteries such as the Eskimo and the Red Paint people of the north-east. Now, with a leap comparable to the leap with which European history has vaulted into the past, American archeology has landed not only thousands but tens of thousands of years in the past—before the glacier. And the finds that supply this evidence of the long and bountiful history of men in America are coming from all over the continent.

These things are doubly important. Flint relics themselves are not enough to tell the story, certainly not at the present stage of study. Mere bones are little better. All the science must work together—archeology, to trace the products of man's industry; anthropology and paleontology, to examine the remains of the man himself and the beasts that were with him; geology above all; to date those animals and date the deposits in which or under which the bones and flints were found.

Man is old in America. Little peaks of civilization have risen and worn away, leaving scattered traces. And if you, readers of *AMAZING STORIES*, with your interest in science and in man's past, go in for relics or amateur archeology—do it right! Organize and work together when you find sites that will be rifed for curios, if left to the general public. Collect intelligently, and catalogue your finds, so that future generations will know whence they come and gain from them, as much as or more knowledge than you will. And when you come on things that are very old—that are deep in glacial gravel, or under deep, undisturbed layers of earth—that are different from all the things that you have come to recognize as characteristic of the people who once lived in your especial neck of the prehistoric woods, for the love of Science call in someone who can get the utmost value from your find! A skilled worker may find proof that will hurl your neighborhood history back to the time when

Kor fought the Neanderthal beast-man in Paleolithic France—proof certified by his standing as a scientist—proof that you, with your narrower knowledge, might have missed.

You won't regret it. A little local glory gone, perhaps—but glory in the eyes of people who don't much care. The respect of scientists, less vociferous but more lasting, will be what you gain—and knowledge. Already chains of evidence are weaving across the continent; from Iroquois New York to Florida, to Arkansas, to the south-west. Maya and Aztec influence is clear in the beaten copper and shaped clay of the Mound-Builders. The blow-gun links the Iroquois with South America; a slate spear head links Maine with Labrador, and Hudson's Bay, and Alaska. Beyond Alaska—Siberia, with the wonderful finds of prehistoric art just made—Manchuria and Mongolia—India—Babylon—Egypt. The world is bound together by a broken net—but the strands are fast being knotted together, and some day a long, strong cord will run, looping and twisting, from the flint arrowhead you found last week in your own back yard to the arrowhead of bone which Kor of old Cro Magnon shot through a Neanderthal heart twenty thousand years and more ago.

P. SCHUYLER MILLER,
302 So. Ten Broeck St.
Scotia, N. Y.

A Charter Member, Who Has Missed No Issue of AMAZING STORIES

Editor, AMAZING STORIES:

Have just completed the March number of our magazine. I say "ours" as I have never missed a copy either of the monthly mag or the Quarterly, also the Annual, that was printed.

However, I have never written in either to kick or praise, as there has never been anything serious to kick about and I figured that as no news is good news, so no comment could be counted as praise.

In the issue just read, I consider "The Conquest of the Planets," the best story with "Zora of the Zoromes" next. Of course I haven't read "Earth Rehabilitators, Consolidated," yet, as I wait until each serial is complete before reading it.

Was much disappointed in the last Quarterly as it was a reprint number and I wouldn't have bought it, but it was the last copy of my year's subscription. I received it while recovering from a major operation in the University of California Hospital in San Francisco, and nearly had a relapse when I found I had read all the contents before. However, I left it in the ward and guess there were many who had never read the stories that were introduced to our magazine through reading it. Before concluding I wish to let the readers

know that I have for sale the following AMAZING STORIES 1929—July to December inclusive, 1930—all but October and November, 1931—December number, 1932—all but April, 1933—Complete, 1934 all but May, 1935—all to date.

Any readers wishing any of these copies may obtain same by writing me, prices will be sent on request.

Don't suppose this will get past the waste basket in the Editorial Office, but as I am one of the original charter members and haven't written in during all these years, would be pleased to see it printed.

Keep up the good work and I'll always be with you.

E. M. Corbett,
824 East 19th Street,
Oakland, Calif.

(We are trying to keep up the "good work" as you call it. You do not tell us if the reprint Quarterly had a good effect on the patients.—EDITOR.)

A Most Appreciative Letter from New Zealand Editor, AMAZING STORIES:

I have just finished reading the latest issue of your magazine out here at the present time, which is the November issue. I have been getting your magazine for over a year now and have never had anything to grumble about. It is excellent. The cover designs are wonderful and the stories, super, super.

Six new readers have joined your big family of readers since I first started reading the A. S.—People to whom I have introduced the magazine.

But sir, I have a request to make of you. Will you allow me to insert a notice or two in my letter?

Will anyone in N. Z. (I say N. Z. because that is where I live) having old issues of this magazine and wishing to exchange or sell the same communicate with me?

Also will someone about my own age (18), a reader of this mag. please correspond with me where we can discuss things and stories, etc., taken from A. S.

George F. Stephens,
552 Worcester Street,
Linwood, Christ Church,
New Zealand.

(We are very glad to publish your appreciative letter in our columns. Your request for a correspondent we think should meet with success. We have published a number of such requests and believe that a number of responses have been received. We hope that you will open some interesting correspondence. The fact that you are in a most interesting part of your hemisphere should bring letters to you.—EDITOR.)

Greetings from Japan, from the Land of the Rising Sun

Editor, AMAZING STORIES:

Sorry I don't have a typewriter handy, but I just don't, so that's that. (If you can read my writing.)

I haven't taken your mag. a year yet, but, I want to say that I think it's great. Morey takes the prize for the pictures, O. K. My favorite authors are J. W. Campbell, H. J. Kastkos, J. W. Skidmore and one or two others. Of your stories, I liked, "The Moon Waits," but frankly, I *did not* like, "The Land of Twilight." I thought, "Earth Rehabilitators, Consolidated" and "The Conquest of the Planets" were excellent. But, as I am not an old-timer, I suppose I'm all wrong.

Yesterday I bound six of my copies, and as a result, I got a pretty fair looking book. I am fourteen, and would gladly correspond with anybody near that age.

Here's hoping for that good old A. S.!

William H. Amos,
1985 Kami-Meguro, 2 Chome,
Meguro-Ku,
Tokyo, Japan.

(Your criticisms are interesting. Naturally some readers will not agree with you, but AMAZING STORIES tries to please as many as possible. You will find below a letter from New Zealand, whose writer wants a correspondent. This would seem a good chance for you.—EDITOR.)

A Delightful Letter from a New Zealand Girl, from the Land of the Maoris

Editor, AMAZING STORIES:

Dear Sir,

I do not know if you have ever received any letters from New Zealand. I have never seen any in your Discussions, although I have not read many, unfortunately, as they seem to reach here in spasms. For a while I can get them regularly, then they seem to stop, then start again. I tell you it is disappointing when one is in the middle of one of those stunning serials, and then have to miss the end.

Of the stories I have read, I have no criticism to offer, indeed, I do not think they could be bettered, and if you keep up your present standard, I do not see how any one can ask for more.

I like D. H. Keller, S. A. Coblentz and P. S. Miller very much indeed, although, you seem to have such a wonderful assortment of authors, that it is hard to pick favorites. By all means, have Morey do the cover, he has such a distinctive air. And, as for your readers, wanting smooth edges and better paper etc., well! I always thought one reads the stories, not the edges or the paper. I cannot see that it makes any difference, anyway, the mag. is always so interesting, that I never have time

to think about the book itself. Concentrate on the stories, Mr. Editor, and you'll find that way pleases most people.

Do you think any of your American or Canadian readers would write to me? I would answer all as soon as I received. Any way, here's hoping, and lots of luck to the magazine, from one of your many girl admirers.

Marie Brizley
32 St. Asaph St.
Christ Church
New Zealand

(We wish to thank you for your appreciation of our efforts. We have received a number of letters from New Zealand which have appeared in our "Discussions" columns. Many of our "Discussions" letters ask for correspondents and we hope that your letter will bring results.

We are investigating the trouble our friends in Australia and New Zealand experience in obtaining our magazine and hope to find the cause of the trouble, so as to rectify it.

We have no recollection of any previous letter from you; we have examined our files and found none; had we received one we would certainly have published it.

You might write to some who want correspondents.—EDITOR.)

The Cover Pages of AMAZING STORIES Criticized. List of Favorite Authors

Editor, AMAZING STORIES:

I've been reading your magazine AMAZING STORIES ever since I heard of science-fiction. Since then AMAZING STORIES has changed hands. I believe it has been for the better, however.

I like the style of the magazine and practically all the authors. I also am a subscriber for the other two magazines, and I believe it is a toss up as to which is the best. I know if AMAZING STORIES had a good cover artist she would undoubtedly be my favorite. The cover that illustrated "Life Everlasting," made your magazine look like a sex magazine, or perhaps, a Physical Culture Magazine. Awfully poor.

"Master Minds of Venus" was a masterpiece. My favorite authors in science-fiction are: Harl Vincent, David H. Keller, Jack Williamson, Neil R. Jones and W. K. Sonnemann. I hope your magazine continues to be a good one as I intend to keep on buying it and I would hate to spend my good money on a punk magazine.

R. J. Bone,
411 W. 1st Street,
Coffeyville, Kansas.

(The cover you considered "awfully poor," has been greatly admired. The author of the story has had the original drawing framed to hang up in his residence.—EDITOR.)

The English Question: Difficulty of Getting
AMAZING STORIES in England. Good Wishes
from Across the Sea

Editor, AMAZING STORIES:

I have been a steady reader of your magazine for about four years and I thought that I should like to show my appreciation for your marvelous selection of authors and stories. Can you tell me what has happened to the Quarterly issue? We in England never see one now, in fact we have a rare struggle to get the monthly one.

There has never yet been anything to touch Campbell's "Invaders from the Infinite." That is what we want, and the more of Campbell you put in the more mags you will sell.

Readers of science-fiction in England are few and far between and one rarely meets a fellow reader to discuss anything with, so should anyone be interested enough to write, I shall be very pleased to start a correspondence with anyone on the subject.

Might I say that I prefer the larger edition to this small one you're now printing. Somehow there appeared to be more in it.

Wishing you and your great work the very best of luck,

Stanley W. F. Sealey,
89 Beachwood Road,
Kings Heath,
Birmingham 14, England.

A. Woolworth carries AMAZING STORIES, not up to date, but they buy a great many. Our subscription department has written to you about your difficulty in getting the magazine. We have been trying to arrange a special English edition; we already have a Canadian edition. Many correspondents prefer the small size. It is easier to carry and read and goes better on library shelves.—EDITOR.)

The April Issue of AMAZING STORIES; Its Cover, Some Authors Whose Stories Are Wished For
Editor, AMAZING STORIES:

The April, 1935 issue of "our" mag was, on the whole, very good. The stories were very interesting and were infinitely better than the reprints published in the first issue of A. S., nine years ago this month. I am very pleased to see that you have numbered this edition—Vol. 10—No. 1. However, we buy our mag., not because it is numbered correctly, but for what it contains. You groaning, chronic grumblers; take note. I must confess, however, that your groaning keeps the editors thinking to satisfy our likes and dislikes. But remember that, although there may be flaws in the science embodied in a story, don't call fire and brimstone down upon the head of the unwitting author.

The editorial was good—it is always interesting and of instructive value. I'm with you, when it comes to such editorials.

Stories were fine, good reading in all of them. Individual criticisms below:

"Earth Rehabilitators, Consolidated, by Kostkos" was well concluded. Beginning rather pathetically it ends quite appropriately in the establishment of a Eutopic State on earth. All's well that ends well.

"The Mosquito Army, by H. M. Crimp" was fair reading. I certainly would not like to be in the path of Prof. Scott's army. Rather uncomfortable, eh what!

"The Sunlight Master, by E. J. Van Name" had some good plotting, though theme is not new. An excellent story nevertheless. Good description. I see that he is a new author, let's have some more stories by him.

"The Martian Mail," by J. L. Burt," was an excellent story, although it had a rather matter-of-fact ending. I only hope that you will remember your promise not to keep us waiting long for another story by this author.

"Relativity to the Rescue, by J. H. Haggard." Another very fine story. Truly this issue could be termed an interplanetary one. Two out of the four complete stories deal with this subject, while the serial is partly about it as well.

The cover, with its subdued colours, was a change from some of the glaring display of previous years. Morey is becoming more distinct in his outlines in inside illustrations, a good job.

By the way, Ed., when in the name of fortune do we get "Liners of Time by John Russell Fearn"? It has been promised us since the Fall of '33. Hurry it up, please.

Another thing, you say you are overstocked with stories and I noticed from reading similar mags. that many of our old favorites among the authors are writing to these mags. instead of to A. S.—authors from whom we have not had a story for a long time. For example, Jack Williamson. Why don't you get out a few more quarterlies and get rid of some of this surplus of stories? Another Interplanetary Quarterly, say, such as you did in Spring Quarterly of 1931. It would go over big.

Still another. Where is "Kingdom of Thought by Eshbach"; "The Maelstrom of Atlantis by Skidmore"; or "The Emperor of the Sahara by Pratt" that you promised would be published soon (in Dec. '34)—within the next five issues? You still have two of these five left.

Yours till we visit Pluto,

C. Howes,
397 Davisville Avenue,
Toronto 12, Ont., Canada.

("Liners of Time" begins in the May issue. We are considering the issue of a Reprint Quarterly. The stories you ask about are inevitably delayed from what may be termed editorial consideration. They will begin to make an appearance soon. We are glad to get good suggestions, especially when preceded by appreciation of our stories.—EDITOR.)

Some Stories Severely Criticized; the International Cosmos Science Club

Editor, AMAZING STORIES:

The White City seems so completely trite, so utterly usual and unstimulating, that one wonders how many stories have been composed on exactly the same theme. *Liners of Time* was merely another mass of science-fiction. *Older than Methuselah* reeked with twenty years of mustiness. Not one of the above stories was really new. Every plot was so exhausted, that it is surprising that it did not drop by the roadside on its way to your office.

A Saga of Posi and Nega was too reminiscent of the other adventures of the atomic personages, too much like the story of a school-boy would write on the "Advantures of a Postage Stamp," too much like every previous tale of the two.

The story you placed last in the magazine was certainly first in order. *The Gypsies of Thos* was a truly great tale. It was new, fresh different, and inspired. Though of an over-written interplanetary type it was told so well, with such delicacy and touch that I shall certainly renew my subscription next year. That is the kind of material that puts you so far above the brain sagging ***** which within a few years has published a coincidingly few number of good tales.

After twelve months have elapsed, I find very scarce praises in Discussions for the *Triplanetary*. This was perhaps the mightiest masterpiece that has ever rolled from the pen of that greatest of composers, E. E. Smith. In it he hurled his God-given gift of oratory like thunder bolts. The smashing style, the magnitude of the plot, the searing reality of those living characters, came into the formation of a finished, rounded colossus. *Triplanetary*!

On behalf of the International Cosmos Science Club, an extremely active organisation for the advancement of science and science-fiction, all persons interested are invited to become members.

The Club issues a monthly journal, the *International Observer*, outlining news and criticisms of that period's science fiction and containing regular articles on current science, including physics, chemistry, astronomy, biology, ichthyology, and telescope-making—altogether very useful and very interesting.

A member has many advantages. At his service is a small but well equipped laboratory. He has the use of the club library. He corresponds and exchanges theories with members interested in the same fields. He trades, as a connoisseur of science fiction, copies of magazines. He learns in the journal pleasantly, what would otherwise involve a search through the Encyclopedia Britannica. For information write to William S. Sykora, 31-51

41st Street, Long Island City, N. Y. The dues, including all above advantages are \$1.50 per year.

Holmes H. Welch,
1733 Canton Ave.,
Milton, Mass.

(There is a proverb to the effect that "One Man's Meat is another Man's Poison." This you can apply to the first two paragraphs of your letter. We can only say that we are glad that even one story in the magazine pleased you. Position in the magazine has nothing to do with merit. We are glad to publish your statement of the club you are interested in.—EDITOR.)

Old and Recent AMAZING STORIES For Sale
Editor, AMAZING STORIES:

I have been getting your dandy AMAZING STORIES for years, and enjoy reading them, immensely, and have saved every copy, except some, which I gave to friends. I still have a large number which I am anxious to sell to anyone wishing back numbers. I have following issues:

Monthly issues: 1929, May; 1930, Jan. to Dec., except Aug.; 1931, Jan. to Dec., except March; 1932, Jan. to Dec., except October; 1933, Jan. to Dec., except May; 1934, Feb. and March.

Quarterlies: Fall, 1929; Summer, Fall, Winter, 1930; Spring, Fall, Winter, 1931; Spring, Summer, Fall, Winter, 1932; Spring, Summer, Winter, 1932; Same, 1933.

May I ask you to please publish this for the benefit of the readers who want to buy them?

I shall, of course, continue reading the new magazines, as they appear, but am anxious to get these off my hands, and your help will be greatly appreciated (in publishing the list of my back-numbers).

Andrew M. Balling,
2202 Penrose Ace,
Baltimore, Maryland.

Back Numbers of AMAZING STORIES For Sale
Editor, AMAZING STORIES:

As a reader of your magazine, since its first appearance, I can supply any of your readers with the following back numbers:

1926—August to December

1927—January to December—September missing

1928—January to December

1929—January to July and December

1930—January to March and October and December

All copies are in good condition and I will sell for any reasonable offer.

Thomas Crook,
25-51—37th Street,
Long Island City, N. Y.

A Letter from England—Why Isn't There an English Edition Is Asked—We Wish There Was One

Editor, AMAZING STORIES:

I have been a reader of your magazine for so many years that I can hardly remember the time when I did not read it, and hitherto, I have not ventured to "sling any brickbats" at you, nor compliments either.

It occurred to me just before I started on this letter that it would be about six months before this letter would appear in print (I am sure you will print this letter because I have noticed that your letters seem to come from places very wide apart, so I think an English reader will get a look in. The reason why that six months is necessary before I will see this letter is as follows: firstly, most of the letters I have read in your February issue are about the October issue, thus making four months; secondly, it is now April and I have only just received your February edition, adding the two together one gets a total of six months, which seems to suggest that in some ways we are not so speedy after all in these modern times. This brings me to my first 'grouse.'

The only way I can get AMAZING STORIES in England is to spend a considerable amount of time looking around secondhand bookstalls, the ordinary newsagents have never heard of a magazine with such a name. It is consequently something of a treasure hunt to get one at all, and to find one of your rare Quarterlies is nothing short of a miracle. *Why isn't there an English Edition?* But, the foregoing 'grouse' is partly alleviated by the fact that, while your magazine is priced at 25 cents, which I think is approximately one shilling at the present rate of exchange, I pay three pence only a quarter of its U. S. A. price, and in addition to that, if I take the dealer back two old magazines he will give me the latest edition free. That seems even better than your Australian correspondent's sixpence.

I do not like Jules Verne reprints in your magazine. It may interest you to know that in Westminster the libraries put his books in the *children's* section of their book-shelves, and in my younger days I read them all as they were the only science-fiction books I could obtain, but I think all the same that Jules Verne was a master writer of his time, nevertheless his stories are out of date now, so keep off them.

I do not like serials though I am not going to say nothing against them, as the only reason I have for disliking them is that occasionally, owing to the difficulty of securing AMAZING STORIES, I miss a part.

Now to get down to the February edition. I think that the serial "Conquest of the Planets" is really tiptop. It holds the interest,

even though it is rather devoid of thrills. It is a story which has balance, by which I mean that it is not too scientific, nor does it err too much towards the other side of the scale.

"Seven Perils to Quiches" is sheer tripe, and not fit to desecrate the pages of your magazine.

The "Valley of the Rukh" is an average story though it leaves a lot to the imagination.

The rest of the stories are O. K.

Now for a really serious complaint:

1. Your paper is too coarse, English magazines of the same price have smooth paper such as this letter is written on. The print is clear though the smooth paper would improve it.

2. The edges are very uneven and ragged, in fact they are disgraceful.

3. Your title is not distinctive enough, it does not stand out on the coverpiece. I realize of course that you cannot go back to the old Comet tail as there is not room, but do make it easily recognizable.

Up to the present I have not said much about Morey, and to be conventional I suppose I must include him in my remarks. He should use brighter colors even at the expense of naturalness. Anyway, he doesn't have to illustrate natural things. The interior pictures in black are O. K. but the way they are printed is no good. In England magazine illustrations are a hundred times superior to yours. However, I have found it is the same with quite a lot of American periodicals.

It may interest you to know that I am writing this letter only a few hundred yards from the famous London Big Ben, though not quite under the shadow of it.

I do not advance any queries on any of the scientific arguments used in your stories as I have a tendency to jump to conclusions, though I entirely agree with Mr. R. C. Kerlin's points with regard to the story "The Moon Waits." Cheerio!

Leslie Harris, Broadway House, Tothill Street, Westminster, London S. W. 1.

(We have published in Discussions a number of letters from England, Australia, New Zealand and other places. It is a curious criticism which has reached us, that we publish too many English and foreign letters. We wish we received more like yours. Our English agent is like yourself almost under the shadow of Big Ben. Westminster is not very large. Our agents are the Messageries Hachette, 3 La Belle Sauvage, Ludgate Hill, London E. C. 4. This is for Europe. For Great Britain the Atlas Pub. and Dist. Co., 18, Drive Lane, Fleet St., London, E. C. 4. If they do not take care of you write us.—EDITOR.)

**A Collection of Pleas, Yet Hardly a Pleasant
One from an English Correspondent**

Editor, AMAZING STORIES:

This letter comes in the nature of a plea—or rather I should say, in the nature of a number of pleas.

The first is about your illustrations. Why don't you get Wesso back? He was by far the best illustrator you ever had—far better than Morey. His shading was of high standard, and his "men," despite the fact that they had gangster noses in some cases, were very finely drawn. Morey, although I must admit he is improving of late, is far too sketchy.

The second plea is for more stories by J. Kendig, Jr. As far as I can remember, he has only written two stories for you. "The Fourth Dimensional Space Penetrator" in the January 1930 issue and its sequel "The Eternal Mask" in the February 1933 issue. The latter was the best novelette you've published during the last two years. See if you can't persuade him to give us more exploits of Lumar and the others.

Plea number 3: Where are Ed. Hamilton and Jack Williamson? Do you realize that it is two years since we've had anything from either.

I'll close this epistle with a rating of the stories in the two latest issues—December and January. "The Sunless World"—Great. "Rape of Million Dollar Gland"—O. K. "Beyond the Aflame"—Good. "Men Created for Death"—Good. "An Epos of Posi & Nega"—Good. "Million Dollar Gland"—O. K. "Beyond the Universe"—Fair. The sonnet was quite good. "Tale of the Atom"—Fair. Of the two serials, Campbell's "Conquest of the Planets" promises to be excellent, but "Land of Twilight" don't appeal to me much.

(We had no idea of constructing a pun out of "pleas" and "pleasant." We like your letter, it is well thought out and your "severe" criticism is welcome.—EDITOR.)

In concluding, in case you should think this criticism rather severe, I should like you to know that your magazine is still the "Aristocrat of Science Fiction." In the words of one of your authors, I read the other science-fiction publications because I like all science-fiction, but when I read A. S., I expect something more. The actual words this author used in a personal letter to me were: "I write for ***** as a business man, but I write for AMAZING STORIES as an author, because the stories in that magazine are more inspirational."

Now that you are completely disgusted with my show of emotion for the old mag., I'll close this rather long-winded letter with best wishes for continued "inspirational" stories.

E. Sutcliffe,
3 Ballantyne Road,
Liverpool 13, England.

**Many Criticisms Falling On the Illustrations,
Covers and Stories in Our Magazine**

Editor, AMAZING STORIES:

I'll see if I can get right to the mark this time without a lot of wandering around.

Cover—Same old trouble. Too many pastel shades and somber grays and browns. Heaven forbid, I don't want any livid Red and Yellows like Paul turns out, but please let's have something a little brighter. See if Morey can't strike the happy medium like H. V. Brown has done.

Inside illustrations—Scratchy and hurried looking as usual. Why are you so reticent about telling us what's happened to Wesso? Every time someone asks you about him you evade the issue. We want Wesso!

Stories: "The Mosquito Army" takes first place with "Relativity to the Rescue," second and "The Martian Mail" and "The Sunlight Master" pulling into dock close behind. "Earth Rehabilitators, Consolidated," was a pretty good story, but some of the science was a little out of kilter. For instance it would take a communiograph a good many years to get to planet A7-TY of Spica. I don't recall anything saying it had a speed greater than light so I assumed that it had. The Body of Five Hundred should have been more conveniently placed. Also when they were using Radonite to locate the laboratory, they took away about a foot of top soil. If they took away the top soil they would have taken away the buildings too.

Editorial—Excellent and very interesting as usual.

On the whole, a good issue, the best since January. You started out with a bang on the January, then fell flop on your ear with the February issue, got up groggily and staggered on with the March number, and just now seem to be getting yourself together again. I hope the May issue will again hit the high level attained in January and keep thereafter and don't stumble again.

Arthur Widner, Jr.,
79 Germain Avenue,
Quincy, Mass.

(The covers of AMAZING STORIES certainly do not uphold your criticisms. Pastel shades, as you call them, are far from descriptive of the luminous effects our covers carry out so successfully. We are not reticent about Mr. Wesso—we do not know what he is doing at present. One artist can do the limited number of illustrations we publish—we feel very definitely that the story is "the thing" (in Hamlet's words) your picturesque description of the rise and fall (see Gibbon) of the successive issues, is very amusing, even if we do not agree with you. The smaller size of the magazine is preferred by so many readers that it would be a mistake to change.—EDITOR.)

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A Change of Opinion Chronicled—But We Are Sorry You Had an Opinion to Change
EDITOR, AMAZING STORIES:

Through your courtesy in printing my letter in the May issue, I have disposed of the books I mentioned. You have my sincere gratitude for the service.

Now to get down to the more interesting subject—our magazine. Do you know that up until the beginning of 1935 I frankly believed that A. S. was the poorest magazine in its field, and purchased it only for the sake of collecting all forms of science-fiction? It's true, and I'll bet many other readers read it for the same reason. However, since January, 1935, the magazine has taken a wonderful turn for the better, and I can safely say that this month's issue is the best magazine in science-fiction. It seems as though the authors are now concentrating on A. S. as a market for their best stories. Why, even Morey seems to have taken my criticism to heart, for his inside illustrations are not so stilted. Rather, they seem more lifelike than ever before. His cover, as usual, is excellent. You understand that I do not criticize his covers; it is his "black-and-whites" that I find fault with.

However, now that I think of it, perhaps I did put it a little too strongly regarding my criticism of Morey's work. But, honestly, don't you think he can do better? Take, for instance, his illustrations for the old, large-size magazine. Aren't they much better? Perhaps it's just that his style is better suited for the large size.

Here's a point about my criticism of Morey's drawings: perhaps, as you have previously said in your comments on several letters, I, being one of the younger set of readers (I am thirteen years old, have not yet developed enough "elasticity" in my criticisms, as would an older person, having better insight. (This sentence is somewhat disjointed, but I think you know what I mean.)

As to the stories themselves: without a doubt the first part of "Liners of Time" was the best story in the issue, but it ended just when I began to enjoy it. In my humble opinion, Fearn is one of the three best of the comparatively new science-fiction authors, the other two being Jack Williamson and J. W. Campbell, Jr.

"The White City" was a typical Keller yarn, and well up to the good doctor's standard. "A Saga of Posi and Nega" was much better than the previous "An Epos of Posi and Nega." Mr. Skidmore displays great writing ability and an entrancing style. "Gypsies of Thos"—another swell story; however, I did NOT like "Older Than Methusaleh," by Coblentz. I don't know why, but I found myself counting the number of pages to the story's end, and thinking of how much space was wasted which might have been given to more of "Liners of Time" or some GOOD novelette. Perhaps it was because I

read it immediately after "Liners of Time," which had such a strange atmosphere, and I felt "let down" in comparing it with Fearn's masterpiece of science-fiction. I think Coblentz had better stick to writing satirical novels.

By the way, what has happened to "The Emperor of the Sahara," by Fletcher Pratt; "The Kingdom of Thought," by L. A. Eschbach, and others announced in the December, 1934, issue.

Hoping you keep up the good work, and wishing you all the success in the world, I'll conclude with a request for correspondents, particularly those of my own age.

Corwin Stickney, Jr.,
28 Dawson Street,
Belleville, N. J.

(The stories you inquire about will appear when we are less crowded. You are an excellent critic, and evidently appreciate the peculiarities of the younger writers' expressions and views. As one grows older he becomes a little more lenient and "elastic," as you put it, in his views.—EDITOR.)

Issues of AMAZING STORIES To Be Disposed Of
EDITOR, AMAZING STORIES:

For some time I have been reading A. S.—in fact from the first issue. Consequently I have a number of back copies that I would like to pass on to some one else.

1931—October. 1932—February, March, April and December. 1933—January, February, March, April, May, July, Aug.-Sept., October, November and December. 1934—January, February, May and December. 1935—January, February and March. 1931—Fall Quarterly. 1932—Winter. 1933—Winter.

All are in good condition and I will sell the monthlies for 20 cents and the Quarterlies for 35 cents.

Billi P. Bowen,
5 West 65th Street,
New York City, N. Y.

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